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Hints for the Use of Prospectors and Persons Engaged in the Early Development of Mining Property.

By Richard H. Stretch, State Mineralogist of the State of Nevada.

When indications of a mineral deposit have been observed, the first thing to be ascertained is its extent, as accurately as may be; and secondly, the character of the ores, and the facilities which exist for their successful treatment—as on this latter circumstance the value of the property will be in a great measure dependent. If the requisite means of reduction are near at hand, and equally accessible, a lower grade of ore will be remunerative, than would be the case if costly flukes and machinery, or transportation of ore and materials to a considerable distance, are unavoidable. At the same time some attention ought to be given to the rocks which are associated with or contain the mineral lodes. If a mine in any district has been proved by development to be valuable, the country rock in which it is found should be carefully noted, as it is not unlikely that wherever they occur in the district, other mines equally good may occur in that connection. Nor is this the only advantage to be derived. If the mine is offered for sale, almost the first inquiries will relate to these matters, experience having shown that certain minerals are usually associated with rocks of a certain age and character, and that mineral-bearing lodes are more apt to be permanent in some formations than in others. The direction of the vein, with regard to the general structure of the country, should be ascertained, noting particularly whether it runs parallel to or crosswise of the various formations; nor should traces of recent volcanic action be overlooked, as in localities where the country is much broken, it is not unlikely that the veins may have been extensively "faulted" or dislocated—an accident of great importance in the successful working of mining property. When a mineral deposit has been discovered, the first thing to be done, as before stated, is to trace it as far as possible on the surface, to ascertain if it possesses the visible characters of a true vein; or if only an isolated or "segregated" mass, whether its extent is sufficient to warrant the cost of development and the erection of works for its reduction. When the vein-stone is hard and crops out prominently, but little difficulty will be experienced: the chief point to be noted in that case being the character of the ore in different portions of the lode, so that the most promising place may be selected on which to begin the work of development. But when the gangue is soft, and the lode has been reduced by the action of the weather to the level of the ground, or has been covered up by the formation of a bed of earth, a different course must be adopted. After ascertaining as nearly as may be the course of the vein, or "strike," as it is technically termed, narrow pits or trenches should be sunk, at intervals of, say one hundred feet, across the ground where it is supposed the lode ought to be found. These pits should be sunk until the rock is found unbroken, and continued until the walls of the vein have been developed. While tracing a vein in this manner, the "dip" of the vein, or its inclination to the horizon, should be taken into account; as, provided the dip be considerable, and the country through which the lode passes be rough and broken up by deep ravines, it will apparently have a very zigzag course on the surface, though really following a straight line through the district. Or yet another plan may be adopted. Starting at the point where the original discovery was made, the vein may be stripped or laid bare on the surface in the direction of its length, and in this way the character of the lode, and its comparative richness at different points may be very thoroughly ascertained; and though the process may seem a slow one, nothing will be lost in the end, as the knowledge obtained by this method will be of incalculable value in all subsequent operations. In a country where the fever for making locations rages as violently as it does in Nevada, this method of exploration has the additional advantage, and no small one, either, of defining the boundaries of the claim, and obviating the risks of adverse locations and subsequent expensive litigation. This item is worthy of serious consideration, when we bear in mind how large a proportion of the profits of our mines has been squandered in this way. Even should the developments show that different claims come into conflict, it should be remembered that it is easier to come to a settlement, in most cases, while the value of the property is yet prospective, than when one or both of the locations have been proved to be valuable. Having, by these means, ascertained the probable character of the property, and the nature of the ores, and more especially whether any changes have taken place in its composition, as is frequently the case in passing from one series of rocks to another,* the prospector is then in a position to inquire whether the requisites for reduction are within an available distance. If the ores are such as may be reduced by a simple amalgamation process, as those, for instance, carrying free gold, or some of the simpler compounds of silver, all that will be necessary is water sufficient for amalgamation and motive power for machinery. If the employment of steam be indispensable, the supply of fuel, either wood or coal, must be greater than if hydraulic power be feasible. Should the ores require roasting, as is often the case in Nevada, the supply of fuel must be greater, and within a reasonable distance, or the cost of transportation will consume the profits of the mine, unless the ores are extraordinarily rich; and in this case the items of fire clay for the lining of the furnaces, and salt for use in the roasting process, must not be forgotten. In cases where smelting must be resorted to, the item of fire clay will be still more important, as will also the quantity of fuel; and the presence of suitable fluxes, such as lime, carbonate of soda, etc., should be ascertained. These considerations are of vital importance, and ought never to be overlooked. Mines will, of course, sometimes be found where one or more of the requisites for reduction are absent, as, for instance, wood or water; and then it will be necessary to ascertain whether the ore can be cheaply sorted or "dressed" up to a grade sufficiently high to pay for its transportation to a more favored locality. This branch of mining, which forms a large item in many European mines, has apparently been but little thought of in Nevada, probably on account of the high price of both labor and transportation. The time is rapidly coming, however, when there will be a material improvement in both these items, and the plan, if judiciously carried out, might be adopted with advantage. The preliminary explorations, when accomplished, will have supplied the data on which to found a rational method of development. The best will depend greatly on circumstances, but in all early works, one imperative rule may be given, "never lose sight of the quartz or other vein stone." If the vein crosses a rough country, and is accessible from a ravine, it will in most instances, be the wisest plan to start from the lowest available point and run a drift on the lode, as the ground can not only be more cheaply excavated and removed by this method than any other, but it possesses the additional advantage of exploring a large amount of ground which can all be removed by stoping upwards, and of draining all the vein which lies above the level of the tunnel. When this plan is impracticable, because the country is comparatively level, or the vein runs along a mountain side but little cut up by ravines, the choice lies between an incline and a perpendicular shaft. The instances in which the latter can be sunk within the vein are comparatively few. The dip of most veins renders an incline preferable. Inclines, as a rule, cost less to sink than shafts, besides exploring more ground, and care should be taken to commence them in the most favorable position. The question of drainage will naturally be a leading consideration. Under the latter supposition there will not be much choice in the matter, but in a country deeply cut up by gulches, if an incline be preferred to a drift on the lode, care should be taken to avoid the ravines; for, though they offer the advantage of attaining depth more rapidly, it should be borne in mind that they are the natural water courses of the country, and more difficulty will be experienced, as a rule, in keeping the water under control, than if the incline be started on the sides or summits of the dividing ridges. It not unfrequently happens that the convulsions which led to the formation of the ravines have broken up the country-rocks in their beds, allowing the surface waters to penetrate more readily to a great depth, and increasing the difficulties of drainage, and the cost of timbering the works, and at the same time have dislocated the veins, which present a less promising aspect to the miner. In the location of mining works, the facilities for dump and roads should also have their weight; but these considerations are of less importance in works for exploration merely, than in such as are intended for the permanent working of the mines. If a shaft or incline be adopted, it may be carried down to a depth of about two hundred feet by manual or horse labor, if no great body of water be encountered; and at regular intervals, say every sixty or one hundred feet, cross cuts should be run to the walls of the vein, if the whole width of it be not taken out in sinking the shaft or incline. Should appearances warrant, drifts can then be started on the same levels, from which other cross cuts can be run at intervals; and in this way the character of the mine may be very fully and satisfactorily ascertained. The whole of these works may be run as small in size as a man can conveniently work in, and as cheaply as

* In the Cornish mines, veins which produce copper in granite frequently change to tin lodes on passing into the "killas" or slates, and *vice versa*; and lodes in limestone producing lead, as in many Derbyshire mines, are not unfrequently barren in the associated green stones.

is consistent with the safety of the mine; but however well the lode may look on the surface, no special provision for the reduction of the ore on a large scale should be made until the mine has been so thoroughly prospected in this manner as to leave no doubt that ore sufficient in quantity and quality is there to warrant the erection of suitable machinery or reduction works. If the result of these explorations is satisfactory, the property is in a good shape for future work; and if the reverse, the value of a mill or furnace, which in Nevada are no small items, will have been saved. No necessity for these latter exists during preliminary operations where mills are already running in the neighborhood, as tests can be had from time to time if any doubt should arise as to the value of the ore. But even where no such works are in operation, and the isolation of the district makes transportation an important consideration, it would still be the wiser policy to freight small quantities of ore to some distance for experimental reduction, even though the cost should be greater than the result obtained; or several companies might unite in the erection of a small prospecting works, an arrangement which would render the cost to each but a nominal item. Beyond this nothing should be done during the early explorations. This position is abundantly proved by the value of the capital locked up in reduction works throughout Nevada; these works being erected before the development of the mines had shown the character of the machinery necessary, or demonstrated satisfactorily that there was material sufficient to keep them steadily employed. When development has proceeded thus far, permanent machinery for hoisting and freeing the mine of water may be erected, and means for the reduction of the ore thought of. Of the former it is not my intention to speak, much judgment and skill having been expended on such works in Nevada, of which we may reasonably be proud; but the importance of the latter calls for a passing notice. The character of the reduction works will of course depend on the nature of the ores to be treated, and too much attention cannot be given to them before deciding on the machinery to be employed. The importance of analytical examination as a guide is far from being appreciated as it ought to be in Nevada. In the case of true silver ores, the majority of them can be successfully treated in Nevada, either by simple amalgamation of the raw ores, as in Virginia and Gold Hill, or by dry crushing and roasting, as in the Reese River district. But we have some few silver ores, as those found in the American Basin and Sheba companies' claims, at Humboldt, which contain so large a per centage of antimony and zinc, that some other plan must be adopted. In this class, too, come all our argentiferous galena and copper ore, the whole of which should be smelted to obtain even an approach to a satisfactory result. And then the question arises whether we can do this as well at home as abroad—whether the results obtained here, when compared with the cost of reduction, are superior to those obtained in old smelting localities, where every appliance can be brought to bear, as compared with the cost of shipment and smelting. The process of smelting is thought by many to be an exceedingly simple operation, and when thoroughly understood it may be so; but good judgment, which can only be acquired by long practice, is essential to success. No definite rules can be laid down which will work in every instance. A general theory may be adopted, but as the composition of ores varies to an unlimited extent, so must the theoretical practice be indefinitely modified to suit the varying circumstances. Nor should it be forgotten that the very basis of the Swansea smelting operations is the mixture of different ores, so that the ingredients in one may assist the liberation of the valuable portions of the other. Ores which by themselves are difficult to beneficiate, yielding poor results at a large expenditure of labor, become remarkably docile in the presence of other materials. This fact may often render the shipment of ores preferable to reduction on the spot, their nature entailing too great a loss or too heavy an expense if worked by themselves. In all cases, however, whether smelted on the spot or shipped for treatment elsewhere, the ores will require a previous dressing to fit them for the furnace; and this must be done at the mine or nearest locality, where water for concentration is abundant. This branch of mining has received but little attention in Nevada, but the time is not far distant when the dressing of ores for shipment will form one of the most extensive of our mining departments; and it is well worth the notice of owners of such property. These remarks may well be closed with a few words on the impolicy of devoting a life-time to making multitudinous locations rather than endeavoring to extract from some of the best of them the wealth which they contain. The number of locations made in the State may be set down at not far short of forty thousand, and the population at somewhere near the same figure, or at the rate of one mine to every one of our inhabitants. Looking at this fact, it is evident that not only our hands, but those of many generations after us, can find employment on the mining ground already located; yet it is doubtful if one-tenth of the property has been even partially developed. There is enough wealth already discovered in our State to make us all rich, if we will but *work* to secure the coveted prize; and the end will be obtained more quickly, and a thousand times more certainly, than by scouring the country in the hope of making the "big strike" which allures too many of our prospectors.

Electro-Magnetism.

Moses G. Farmer, of Salem, Mass., writing to an English savant, Mr. Wilde, says that he obtained an increase of 30 per cent. in the power of an magneto-electric machine, by transmitting the current from the armature, through coils of wire surrounding pieces of soft iron, forming the prolonged extremities of the permanent magnets of the machine. In addition, he says: "I have built a small machine in which a current from the thermo-battery excites the electro-magnet of your machine to start it, and after the machine is in action, a branch from the current of the magnets passes through its own electro-magnet, and this supplies the magnetism required. It is not exactly like a person standing in a basket and trying to lift himself—because the electricity proceeds from the conversion of the mechanical energy, which must be continually supplied. Neither can it in any wise be likened to the various schemes for producing perpetual motion; but depends on the principle, that the actual energy of the mechanical force, conjointly with the potential energy of the magnet can develop a greater amount of potential energy than is originally resident in the magnet; or, in other words, it is a method of converting part of the actual energy of the prime mover into the potential energy of magnetism."

Precious Stones in Georgia.

The Athens *Watchman* calls the attention of the public to the fact that Dr. Stevenson, the eminent mineralogist and geologist, who was for many years Assayer in the United States Branch Mint at Dahlonega, speaking of the mineral resources of Georgia, says fine amethysts have been found in Hall county, Forsyth and Columbia, the topaz in Lumpkin, the cornelian in Rabun, the beryl in Clarke, and the lazulite in Lincoln, accompanied with splendid crystals of rutile, some weighing twelve ounces. The zircon, in great quantity, is found, as an accompaniment of the diamonds, all along the belt of itacolumite. The kyonite is found in Egbert county, and the chalcedony is associated with the cornelian in Rabun county, as also the amianthin asbetos, of great strength of fibre, and over two feet long. The garnet is abundant, but everywhere of a poor quality, No emeralds have been found, nor sapphire. The opal abounds in the middle counties. The precious, or fire opal, however, has only been found in South Carolina, where some valuable specimens were obtained by the late Dr. Andrews, of Charlotte, N. C. Judge Peck, of East Tennessee, found a small emerald in Hawkins county. The ribbon jasper is abundant, and pictorial marble of great beauty.

Hard Hydraulic Cement.

The following recipe is given for a cement which, it is said, has been used with great success in covering terraces, lining basins, soldering stones, &c., and everywhere resists the filtration of water; it is so hard that it scratches iron. It is formed of sixty-three parts of well-burned brick and seven parts litharge, made plastic with linseed oil. The brick and litharge are pulverized; the latter must always be reduced to a very fine powder; they are mixed together, and enough linseed oil added. It is then applied in the manner of plaster, the body that is to be covered being previously wet with a sponge This precaution is indispensable, otherwise the oil would filter through the body and prevent the mastic from acquiring the desired hardness. When it is extended over a large surface, it sometimes happens to have flaws in it, which must be filled up with a fresh quantity of the cement. In three or four days it becomes firm.

The Magnetic Anti-Incrustator.

The engineer of one of the principal works in America writes us as follows: "I have heard of one case where the magnetic anti-incrustator appeared to work well at first, that is, removed old scale, but after that was done new scale began to form, and, I am told, keeps forming as though no apparatus was there, and this in spite of an additional or more powerful set of magnets. From these facts I am led to infer that the battery should be revised frequently, that is, where scale deposits with positive electricity, then negative must be used to break it up, and where scale deposits with negative electricity, then positive must be used to break it up. I may be wrong as to my opinion, but as to the facts mentioned, I believe there is no question".—*Engineering.*

Original Papers.

Translated for the AMERICAN JOURNAL OF MINING, by ADELBERG AND RAYMOND, Mining Engineers.

A Comprehensive View of the History and Present Standpoint of Geology:

Being the Introduction to Prof. BERNHARD COTTA'S new work, "Die Geologie der Gegenwart."

No. III.—Continued from Page 103.

The increase of temperature in the earth's interior, the hot springs issuing from great depths, the glowing fluid lavas of volcanoes, taken together with similar indications given by the mass and structure of the older volcanic and plutonic rocks also, have justified the supposition that, under its solid crust, the interior of the globe is still in a state of fusion.

The almost inevitable logical consequence is the further hypothesis, that the entire mass of the globe must once have been in the same state of fusion (of which its present condition is but the remainder), and originally surrounded by a gaseous atmosphere, denser and more substantial than the present one. At first this fused mass was entirely without any covering of water.

Starting from this hypothesis, the principal features of the history of the globe's development, and of its interior structure, may be explained in a very simple way. Through constant radiation of heat into space the mass of our planet grew steadily cooler. On the surface of the fluid globe appeared at first a crust of congelation, which was the first rock-formation. This crust, however, was, like ice over moving waters, often burst and broken through by the fused interior masses, and thus originated the first eruptive rocks, the formation of which has been, with various alterations of time and place, continuously progressing ever since. A second stage of congelation is marked by the condensation of water on the now solid crust, which, under the pressure of a denser atmosphere, must have taken place at a temperature higher than the present boiling point of water. From this age dates the influence of water as a geological agent in dissolving and mechanically disintegrating solid masses, and redepositing their material elsewhere. The activity of this second geological agent, although forced by elevations and depressions periodically to change its fields of operation, has also lasted to our days. Its chief effects are seen in the sedimentary rocks of the most diverse kinds and ages.

A third stage of congelation is marked by the development of organic life, the remains of which we encounter in the sedimentary deposits, and the distribution of which in the strata of different ages presents a progressive series of forms from the inferior to the superior, and an ever-increasing variety of formation and organization.

A fourth stage of congelation seems to have been inaugurated after the gradual development of climatic zones by the appearance of ice on the earth's surface, which may have taken place at the end of the so-called tertiary period. Through all these epochs the geological effects, though corresponding to changed circumstances, remained essentially the same. The circumstances, however, changed continuously; namely—

1. Through decrease of temperature (also to be deduced from the distribution of organic remains.)

2. Through attenuation of the atmosphere, which supplies oxygen, hydrogen, carbon, etc., to the water and the solid parts of the earth.

3. Through the aggregated results of destructions, reconstructions, and changes generally, whereby the complexity of inner structure, as well as superficial form, must of necessity steadily be increased.

All these conditions necessitate, at the same time, a steady change in organic forms.

These general outlines of a history of the globe's development we intentionally call a hypothesis, or rather, on account of its comprehensiveness, a theo-

ry; but it is, beyond doubt, that explanation of the facts which corresponds best with the present state of our knowledge. If this theory should become untenable in the progress of science, still the whole structure of our present geological knowledge will not fall with it. The explanation it gives is only a result of our present geological knowledge of the globe's structure. That knowledge itself, resting on a summation of facts, is a very different thing. It is, therefore, by a strange misunderstanding of circumstances, that some lovers of geology attempt to pull down the whole laboriously-erected structure of our science by shaping such hypotheses of conclusion as belong at most to its roof, but not to its foundation, and can have no decisive influence upon the progress of investigation. It has never occurred, nor is it likely to occur, that a science which has been during half a century strengthening its foundations and elaborating its superstructure, should suddenly undergo complete transformation. Progress is achieved slowly; every new fact contributes to it, but no single one can destroy the whole structure, if that structure has had a scientific basis.

Supported by Werner's fundamental theory, the doctrine developed and maintained itself until long after his time, that all rocks, of whatever origin, were distinct according to their age; in other words, that every geological period produced rocks peculiarly its own, and that, consequently, from their *habitues* the geological period to which they belonged could be determined. Granite, gneiss, and mica slate were generally considered the oldest, or so-called primitive rocks; of later origin were considered the porphyries and greenstones, and of still more recent formation, trachytes, basalts, etc. Even the sedimentary rocks, as such, were considered distinguishable according to their age.

Although undeniable facts often necessitated an acknowledgment of exceptions to this assumed rule of age-classes, still the prejudice prevailed with great tenacity, that the constitution of rocks *per se* depended especially upon the geological period of their origin: i. e. that in different periods always different rocks, and in one and the same period everywhere similar rocks of the same category, originated. Now, although it is undeniable that the older rocks of various origin are, in their general *habitues*, different from those of more recent periods, and that, setting aside exceptions, the age of rocks may, in some measure, be determined from their condition; still, we believe the modern geologists agree in holding that the difference in structure of rocks, often corresponding to a difference of age, is not as much (perhaps not at all) an original, but rather a secondary, difference, produced by subsequent metamorphosis; or, if original, produced by conditions equally independent of the period of formation.

We shall consider this more in detail in our next paper.

TRANSLATED FOR THE JOURNAL OF MINING.

AMALGAMATION—No. IX.

By J. H. Tiemann, M. E.

[Continued from Page 104.]

Copper is supposed to amalgamate with difficulty, but it may be easily combined with quicksilver when freshly precipitated and in a porous state, and copper amalgam may be obtained still more readily by laying the chloride or sulphate of copper on quicksilver, pouring a solution of salt or acidified water over it, and bringing iron in contact with it. A galvanic action immediately ensues, and the amalgam may be seen collecting on the iron.

In an ordinary amalgamation the copper is divided between the amalgam and the tailings. The amalgam absorbs that portion which is precipitated from the copper salts by the iron, while the tailings carry off the free oxyd of copper which is formed, especially when the ores contain lime. The more lime there is present the more free the amalgam will be from copper. The copper in the tailings is lost entirely if there is not sufficient to pay for smelting. In order to effect this, the mixture of the ores should contain at least several per cent. of copper, which is very seldom possible, but even if it were the amalgam, without an extra addition of lime, would be so rich in copper that the resulting metal would be more copper than silver, and could scarcely be used without a previous parting, and this amalgam would adhere more firmly to the tailings, and thus cause a great loss. This could be prevented by the addition of lime, and almost all the copper could be recovered in the tailings, but this would cause a smaller yield of silver in the amalgam, and consequently the tailings would be too rich in silver. For this reason it is better to exclude all copper ores proper from amalgamation, and this is done at Freiberg; traces of copper cannot be avoided, in the yearly production of about 30,000 marks (20,000 lbs.) of silver—fifty or more cwt. of copper are produced. But it is probable that a much larger amount of copper remains in the 60,000 to 65,000 cwt. of tailings, which might be recovered by smelting. Copper may be prevented from amalgamating by using copper instead of iron plates in the barrels. The plates themselves are but slightly inclined to amalgamate, and as they cannot decompose the copper salts in solution, these latter go to the tailings. The use of copper plates will be again referred to further on.

Copper amalgam has a reddish color, and is not so readily separated from the quicksilver by pressing as silver amalgam. But like all similar fluid amalgams, it attaches itself readily to solid substances, and for this reason the metal from the amalgam in the settlers is richer in copper.

Lead amalgamates with the greatest facility when in the metallic state, and needs but about half as much quicksilver for its saturation as silver. The amalgamation requires neither warmth nor agitation; it has a gray color, is very pasty, and adheres to the sides of the vessel and to the tailings. The surface soon becomes covered with a wrinkled skin, which, when removed, immediately reforms; it is caused by an oxidation of the lead to suboxyd, and a partial oxidation of the quicksilver. Lead must therefore be avoided as, far as possible, in mixing the ores, especially on account of the pasty consistency which it gives to the amalgam, causing a great loss of amalgam, and at the same time increasing the loss of quicksilver. In the amalgam mixtures at Freiburg there is always a small per-centage of lead, which, if completely amalgamated, would give a large excess of lead over silver in the amalgam, and would completely ruin the whole process. But the amount of lead amalgam usually forms but a small per-centage of the whole, and this is usually found in the amalgam from the settlers. The larger proportion of lead, therefore, remains unamalgamated, and it is probable that only the very unimportant amount of metallic lead is amalgamted which is formed by the contact of sulphuret with oxyd of lead in the roasting, for chloride, as well as sulphate of lead, when triturated in a solution of salt with quicksilver and iron, yields no amalgam. Only when there is a large quantity of iron present, are these compounds slightly decomposed, thus increasing the formation of lead amalgam only to a very slight extent.

Zinc in the ores remains unamalgamated; it is partially volatilized in roasting, and what remains comes into the barrels as a soluble salt which is not precipitated by the iron. Metallic zinc amalgamates very readily, and for this reason it cannot be used in the place of iron for reducing the hornsilver.

Iron, which occurs in large quantities in the assists materially, when in the metallic state, in the formation of silver amalgam, as it is a positive metal. At the same time it protects the quicksilver from the action of acids, and its salts increase the power of the solution, but they must not be in excess, as then they act too energetically and develop a temperature which increases the loss of quicksilver. It was for a long time a question whether iron itself was capable of being amalgamated. So much is easily seen, that it attracts many amalgams, such as gold and copper, and is easily coated by them. In the Freiburg amalgam iron is frequently found, sometimes a large per-centage, rendering the purification of the silver very difficult. It would appear, however, that this property is the result merely of a mechanical mixture.

(TO BE CONTINUED.)

[WRITTEN FOR THE JOURNAL OF MINING.]

NITRO-GLYCERIN.

By Alexander Addison, C. E., of Clausthal am Harz, Prussia.

Nitro-glycerin, according to M. Pelouse, was discovered in his laboratory in Paris about twenty years ago by Sombrero, an Italian. When glycerin $C_6 H_{16} O_6 = C_6 \begin{pmatrix} H_{10} \\ H_6 \end{pmatrix} O^6$ is treated with nitric acid there results, according as H_6 is partially or wholly displaced:

1. Nitro-glycerin.....$C_6 \left\{ \begin{matrix} H_4 \\ N_2O_4 \end{matrix} \right\} O_6$
2. Di-nitro-glycerin ....$C_6 \left\{ \begin{matrix} H_{12} \\ 2(N_2O_4) \end{matrix} \right\} O^6$
3. Tic-nitro-glycerin....$C_6 \left\{ \begin{matrix} H_{10} \\ 3(N_2O_4) \end{matrix} \right\} O_6$

The third, which is the so-called nitro-glycerin, is prepared by slowly adding glycerin to a mixture of sulphuric and nitric acids, the temperature being kept at 32°. The nitro-glycerin is separated out by treating with water.

It is a clear, oily liquid with a specific gravity of 1.6, soluble in alcohol and ether, and partially so in water. It explodes with great violence by percussion, but may be heated or burnt in the open air without explosion. It solidifies at 41°, in which state it explodes by being struck or rubbed with a hard body. After being kept for some time it does not solidify, even by temperatures as low as 0°. It should not be kept in a tightly-closed vessel, as the gases given off may produce an explosion. When struck the detonation simply takes place at the point of percussion; the remainder of the fluid is neither exploded nor burnt. When any surface, as an anvil, is covered with a slight coating of nitro-glycerin a series of separate and unconnected explosions may be produced, and if the coating be sufficiently thick, drops of the unexploded oil may be seen clinging to the head of the hammer by which the explosions have been effected.

Dissolved in methylic alcohol, it loses its explosive properties, which can be immediately restored by adding water in excess, when the nitro-glycerin is at once precipitated. A drop of the solution may be exploded by percussion, upon adding a little water.

Nobel divides the decomposition into two grades: 1st, slow decomposition by conduction of heat. 2nd, forcible decomposition, when the temperature of the body is raised to 356° (1180° centigrade.) When a total explosion is desired it is necessary to heat the entire mass to that temperature during 1-300th of a second, the time of explosion. Although its detonating properties were known to the discoverer, yet, owing to the difficulty of producing a total explosion, Nobel, of Stockholm, the patentee, was the first to apply it as a substitute for powder. He claims:

"*a*—The rapid heating of the nitro-glycerin and analogous bodies by mixing them with gunpowder, pynxyline, or similar substances, and the use of this powder as gun and blasting powder.

"*b*. The sudden heating of nitro-glycerin and

analogous bodies, without mixing, by the powerful pressure of a local detonation, which, acting in the direction of the resistance, produces a total explosion.

"*c.* The exclusive use of nitro-glycerin and analogous bodies, or compounds of the same, for blasting, so far as this use is included under the above-mentioned discovery."

The local explosion mentioned in paragraph *b.* Nobel proposes to produce by different means, such as a tube filled with powder and closed below by a cork, electricity, by a cartridge, by enclosing the nitro-glycerin in a tube contained in a second, filled with rocket powder or unslacked lime and water, or by an ordinary fuse, the nitro-glycerin being tightly enclosed. In all these cases the nitro-glycerin is supposed to meet with resistance from the sides and from below, as, for instance, when enclosed in a drill-hole, and the detonation, acting from above with such force upon the entire mass that it at once obtains the decomposing temperature and explodes.

Nobel further claims an improved method of preparing the nitro-glycerin and the acids. With regard to the preparation of the oil, he says: "I prepare it principally by the rapid mixture of the *entire* of glycerin and acids, after which the mixture is poured out into cold water, and the nitro-glycerin deposits itself on the bottom."

"If glycerin and a mixture of sulphuric and nitric acids are strongly agitated and allowed to run through a tube, the result is an unbroken preparation."

If the heat generated be too great, the nitric acid is added in four or five portions, the mixture being allowed to cool between each addition. In the preparation of the acids Nobel adds, to 3½ parts by weight of sulphuric acid, one part of nitrate of potassa or soda. The resulting sulphates are separated from the remaining mixture of sulphuric and nitric acids, which mixture Nobel claims is particularly favorable to the preparation of nitro-glycerin.

A Toast for Labor.

Here's to the man with horny hand
Who tugs the breathing bellows;
Where anvils ring in every land,
He's loaned by all good fellows.

And here's to him who goes afield,
And through the globe is ploughing,
Or with stout arm the axe doth wield,
While ancient oaks are bowing.

Here's to the delver in the mine,
The sailor on the ocean,
With those of every craft and line,
Who work with true devotion.

Our love for her who toils in gloom,
Where cranks and wheels are clanking;
Bereft is she of nature's bloom,
Yet God in patience thanking.

A curse for him who sneers at toil,
And shuns his share of labor;
The knave but robs his native soil,
While leaning on his neighbor.

Here may this truth be taught on earth,
Grow more and more in favor;
There is no wealth but owes its worth
To handicraft and labor.

Then pledge the founders of our wealth—
The builders of our nation;
We know their worth, and now their health,
Drink we with acclamation.

☞ **M. Greiss has introduced a new explosive body,** diazobenzole, which it is proposed to substitute for fulminate of mercury. It is made as follows: One equivalent of hydrochlorate of aniline is mixed with two equivalents of hydrochloric acid, and to this mixture is added very gradually one equivalent of nitrite of soda in strong solution. This mixture is left to itself as any nitrogen is disengaged. When the evolution of nitrogen has ceased, it only remains to extract the diazobenzole and get in a state fit for commerce and use. To this end a concentrated solution of one equivalent of bichromate of potash in one equivalent of hydrochloric acid is added, which causes a precipitate of chromate or chlorochromate of diazobenzole. This precipitate must be separated and dried, of course, with the utmost precaution.

☞ **A new porcelain glaze may be made as follows:** Dissolve platinum and aluminium together in "aqua regia." A double chloride of the two metals is the result. Mix this with finely ground Limoge glaze—a potash-alumina produced from pure pegmatite, a quartz and felspar rock. Apply this mixture in the ordinary way. Beautiful effects are said to result from its use.

[PREPARED FOR THE JOURNAL OF MINING.]

A NEW CHEMICAL NOMENCLATURE,

By Samuel Dyer Tillman, A. M., Professor of Technology at the American Institute of the City of New York.

[No. VII.—Continued from Page 104.]

Substitutions.—Dumas' doctrine of substitutions is very clearly set forth in the following examples:

1. **Marsh gas** = *arol.* Chloride of methyl (*achald*) = arilal.
   Monochlorinated chloride of methyl, areled.
   Dichlorinated chloride of methyl (chloroform), arlid.
   Perchlorinated chloride of methyl, arod.
2. **Ethylene,** *erlel.* Chlorinated ethylene, erlald.
   Dichlorinated ethylene, $C^2H^2Cl^2$, erled.
   Trichlorinated ethylene, C^2HCl^3, eralid.
   Perchlorinated ethylene, C^2Cl^4, erod.
3. **The action of chlorine on ethylene and chloride of ethyl produces metameric compounds having widely different boiling points, thus distinguished:**
   Dichleride of ethylene (Dutch liquid), $C^2H^3\ HCl^2$, = erleld.
   Monochloretted chloride of ethyl, $C^2H^4\ ClCl$, = eched.
   Monochlorinated ethylene, $C^2H^3\ ClCl^2$, = erlalid.
   Dichlorinated chloride of ethyl, $C^2H^3\ Cl^3$, = ecilid.
   Dichlorinated ethylene, $C^2H^2\ Cl^2Cl^2$, = erlod.
   Trichlorinated chloride of ethyl, $C^2H^2\ Cl^4$, = eclod.
   Trichlorinated ethylene, $C^2H\ Cl^2Cl^3$, = eralud.
   Tetrachlorinated chloride of ethyl, $C^2H\ Cl^5$, = ecilud.
   Perchlorinated ethylene, $C\ Cl^3Cl^2$, = eread.
   Perchlorinated chloride of ethyl, $C^2\ Cl^6$, identical with eread.
4. **Naphthalene,** $C^{10}H^8$, **eureil.** (Paranaphthaline, $C^{14}H^{10}$, yoreul.)

Chloronaphthaline,	eureelad.	Bromonaphthaline,	eureelab.
Dichloronaphthaline,	eurealed.	Dibromonaphthaline,	eurealeab.
Trichloronaphthaline,	eurulid.	Tribromonaphthaline,	eurulib.
Tetrachloronaphthaline,	eurold.	Tetrabromonaphthaline,	eurolb.
Hexachloronaphthalene,	eurelead.	Perchloronaphthaline,	eureid.

5. **Chlorides and Bromides of Naphthaline, with Gmelin's names and formulæ:**
   Hydrochlorate of chloronaphthaline, $C^{10}H^7Cl\ HCl$ = eureiled.
   Hydrochlorate of chlorobromonaphthaline, $C^{10}H^6BrCl\ HCl$ = eureelabed.
   Hydrobromate of quadribromonaphthaline, $C^{10}H^4Br^4\ HBr$ = eurulb.
   Bihydrochlorate of bichloronaphthaline, $C^{10}H^6Cl^2\ 2\ HCl$ = eureilod.
   Bihydrochlorate of bromochloronaphthaline, $C^{10}H^6BrCl\ 2\ HCl$ = eureilabid.
   Bihydrochlorate of terchloronaphthaline, $C^{10}H^5Cl^3\ 2\ HCl$ = eureelnd.
   Bihydrochlorate of quadrichloronaphthaline, $C^{10}H^4Cl^4\ 2\ HCl$ = eureald.
   Bihydrochlorate of bibromobichloronaphthaline, $C^{10}H^4Br^2Cl^2\ 2\ HCl$ = eurealebod.
   Bihydrobromate of bibromobichloronaphthaline, $C^{10}H^4Br^2Cl^2\ 2\ HBr$ = eurealedob.
   Bihydrobromate of terbromochloronaphthaline, $C^{10}H^4Br^3Cl\ 2\ HBr$ = eurealadub.
   Bihydrobromate of quadribromonaphthaline, $C^{10}H^4Br^4\ 2\ HBr$ = eurealb.
   Bihydrochlorate of bibromoterchloronaphthaline $C^{10}H^3Br^2Cl^3\ 2\ HCl$ = eurulebod.
   Bihydrobromate of pentabromonaphthaline, $C^{10}H^3Br^5\ 2\ HBr$ = eruleeb.

Isomerism.—By applying the principle of permutation in the arrangement of letters, the same name is never given to metameric bodies having the same ultimate composition. A few examples will sufficiently prove the adaptation of the new system to cases of isomerism. Each of the following ten bodies has the empirical formula $C^{10}H^{20}O^2$:

Rutic or Capric acid,	$H\ CO\ C^9H^{18}O$,	larteochalt.
Formiate of elayl,	$C^9H^{19}\ CO\ HO$,	eochal artalt.
Acetate of capryl,	$C^8H^{17}\ CO\ CH^3O$,	eichal-artachalt.
Propionate of œnanthyl,	$C^7H^{15}\ CO\ C^2H^5O$,	eechal-artachalt.
Butyrate of caproyl,	$C^6H^{13}\ CO\ C^3H^7O$,	eachal-artichalt.
Valerate of amyl,	$C^5H^{11}\ GO\ C^4H^9O$,	uchal-artochalt.
Caproate of butyl,	$C^4H^9\ CO\ C^5H^{11}O$,	ochal-artuchalt.
Œnanthate of propyl,	$C^3H^7\ CO\ C^6H^{13}O$,	ichal-artcachalt.
Caprylate of ethyl,	$C^2H^5\ CO\ C^7H^{15}O$,	echal-arteechalt.
Pelargonate of methyl,	$CH^3\ CO\ C^8H^{17}O$,	achal-arteichalt.

Each of the seven following compound ammonias has the same ultimate composition, $C^6H^{15}N$:

Triethylamine,	$(C^2H^5)^3\ N$,	echaliman.
Dipropylamine,	$(C^3H^7)^2\ HN$,	ichalemalan.
Caproylamine,	$C^6H^{13}\ H^2N$,	eachilan.
Amyl-methylamine,	$C^5H^{11}\ CH^3\ HN$,	uchal-achelan.
Butyl-dimethylamine,	$C^4H^9\ (CH^3)^2\ N$,	ochal-achaleman.
Butyl-ethylamine,	$C^4H^9\ C^2H^5\ HN$,	ochal-echelan.
Propyl-ethyl-methylamine,	$C^3H^7\ C^2H^5\ CH^3N$,	ichal-echal-achalan.

Two Ammonia-cobalt metamers, empirical formula $(H^3N)^5\ CO(Cl^3$:

Roseo-pentammonia-cobaltic chloride,	ilanum-cobamid.
Purpureo-pentammonia-cobaltic chloride,	yulun-cobamid.

It has already been admitted that the improved names, as found in Watts's New Dictionary, have the merit of more precision than the old nomenclature in designating the proportions of non-metallic elements but this precision is not always observed in that portion of the name defining the metal. For the purpose of comparison, a few of the names given as examples under the article on Nomenclature, page 125 are here inserted, with the symbols and the proposed new names:

Platinic dichloride	= $PbCl_2$,	platamed.
Diplumbic trioxide	= Pb_2O_3,	plubemit.
Triplumbic tetroxide	= Pb^3O^4	plubimot.
Diplumbo-dihydric trioxide	= $[Pb^2H^2]O^3$,	plubemelit.
Triplumbo-dihydric tetroxide	= $[Pb^3H^2]C^4$,	plubimelot.
Bismuthic oxichloride	= $BiClO$,	bisamadat.
Diplumbic oxidichloride	= Pb^2Cl^2O,	plubemedat.
Triplumbic dioxidichloride	= $Pb^3Cl^2O^2$,	plubimedet.
Trimercurio-dioxidicchloride	= $Hg^3Cl^2O^2$,	hygimedet.
Hydrargyro-dihydric-chloronitride	= $HgCl\ H^2N$,	hygmadelan.
Tetramercurio-tetrahydric-trioxidinitride	= $H^4N^2\ Hg^4O^3$,	olen-hygomit.
Tetramercurio-tetrahydric-dioxidichlorodinitride	= $Hg^4H^4Cl^2N^2O^2$,	hygom-oledent.

Granite and Other Crystalline Rocks.

All known rocks are of sedimentary origin, that is, they were deposited from water, and were the result of chemical and mechanical action, consisting chiefly of limestones, clays and sands, or variably mixtures of these. The influence of internal heat, aided by water upon these where deeply buried, condensed them and rearranged their particles, changing them into crystalline rocks, from which the traces of sedimentary origin are nearly effaced. When again uncovered, these rocks appear as gneiss, mica-slate or granite. The granitic base or substratum of geology is a fiction. No one has ever seen the primeval crust, which is everywhere deeply buried beneath its own ruins, and it can be demonstrated that this crust must have been totally unlike granite, which in all cases had a sedimentary and aqueous origin, although, like other softened rocks, it often assumes an eruptive or scotic form. It can be proved that the crystalline rocks of New England were, at one time, buried beneath sedimentary strata at least two or three miles in thickness which were, long ages ago, removed by denundation to build up rock formations in other regions.

Mining Summary.

GOLD AND SILVER.

Nevada.

Silver Bend.—We have received from Messrs. Oscar L. C. Fairchild & Co., Publishers, No. 2 vol. 1 of the Silver Bend *Weekly Register*. It is about the size of the *Reveille*, neatly printed and crammed with mining news, and gives ample evidence of creditably representing its section. We are indebted to it for the following items: Last week an important sale of mining property in this district was consummated. The purchase includes the entire interest held by Col. D. E. Buel, upon the Highbridge location from which the mill has been supplied with ore, amounting to four-fifths; a like interest in the ten-stamp mill; the Buel, and Gilleland locations upon the Transylvania ledge; and Buel's location upon the El Dorado. The purchasers are J. W. Gashwider, M. J. McDonald and S. M. Buck. The Belmont Mining Company—for that is the firm name of the association—having ample capital to operate with, will commence a vigorous system of development. For the present, the mill will be supplied with ore from the Transylvania, of which there is already exposed fully three hundred tons of a high grade, while deeper shafts will be sunk upon the Highbridge, levels run, and preparations made with reference to its future working upon an extensive scale..... We condense the following relative to the Highbridge Ledge, which is situated upon the eastern slope of the range of mountains skirting Monitor Valley upon the west: This magnificent vein, occurs in slate, dips to the east, can be traced for a long distance, and has various locations upon it belonging to different companies. Its position being upon the low foothills close to the western edge of the valley renders it remarkably accessible. The first location made upon the Highbridge was in the month of October, 1865, and soon after came into the possession of Dr William Geller. Nothing was done toward the development of the ledge until the following spring when its great value became apparent and Dr. Geller, as Agent of the Combination Silver Mining Company, commenced operations. At the commencement of operations, the superintendency of mining affairs was entrusted to Mr. L. B. Moore, who has ever since directed the work. The company's location on the Highbridge comprises 6,000 feet. About 200 feet north of the southern boundary line a tunnel has been run into the hill cutting the lode at right angles at a depth of about ninety-five feet from the surface Several hundred feet north of this tunnel there is still another one, cutting the ledge at a similar depth. In each of these tunnels drifts one hundred and fifty feet have been driven upon either side and the quartz composing the vein extracted. In the tunnel farthest south the ledge was found to be sixteen feet in thickness, and at this point barren. Some fine ore, however, was taken from the level running from the tunnel south, and the ore above next to the surface for a depth of at least sixty feet was known to be of a high grade, having been exposed by stripping. A shaft was started in the tunnel where it cut the ledge which in the progress of sinking disclosed the fact that the vein had been from some cause disturbed and was curved to a degree that gave it, seemingly, a dip to the westward. Continuing the shaft fifty-five feet through rock containing but little mineral, it suddenly assumed its position again to the eastward and, as if by magic, the barren gangue became heavily laden with mineral, rich to an extent almost exceeding belief. One set of workmen are here continuing the incline which has been cut through this body of rich ore, now for more than twenty-five feet, while another shift is running a level to the south, which has been driven about thirty feet with no diminution in the richness or extent of the mineral. The vein is nearly a solid mass of mineral, and in drilling it for blasting the instrument cuts slowly and leaves upon its course a smooth surface with a highly metallic lustre. How thick the vein is at this point has not been determined. The stratum upon which the workmen are employed is about thirteen feet wide—a massive, compact body of black sulphuret ore. It is estimated by the superintendent that the bulk of the ore will yield from $400 to $500 per ton at the mill. There is no doubt that the entire body of the vein, as taken out, will yield upwards of $100 per ton. The superintendent informs us that about forty tons of this ore can be extracted daily with the present force of workmen, and after levels are run that about two hundred tons can be stoped out daily. The general agent of the company is now at San Francisco for the purpose of purchasing the machinery for a forty-stamp mill.

Washington.—Henry K. Mitchell publishes in the *Tresspass* the following relative to this district: About half a mile from the river are located the mines, and the ledges are large and croppings very prominent. Huge mountains arise on either side of a ravine leading from the river; and when a sudden turn occurs in this valley it shows a large mountain rising abruptly, which points to the southwest its enormous front, as one would use an arm crooked at the elbow to designate any particular object. The ledges are four in number, running parallel across the ravine, and piercing the mountains on each side, and are plainly visible in a series of rough croppings. These ledges are all located, and the requisite assessment work to hold the title has been done the past month. They are owned by Messrs. Cheever, Tolman, Turner, Drexler and other gentlemen well known in this section. So precipitous are the mountains descending to the ravine that a tunnel five hundred feet in length on the face of either, running diagonally will cut all four of the ledges at a depth of three hundred feet from the croppings. The gentlemen above named are now preparing to run such a tunnel, and work thereon will be commenced in a few days. We were shown some of the ore from a few feet below the croppings, which does not resemble any ore we have ever seen here, it being argentiferous galena and gray copper, mixed with quartz gangue that will require preliminary treatment before reduction. Chloride of silver shows in the ore, but no traces of gold ore is visible to the naked eye. From these ledges to the river the grade is easy, and the ore could be transported thither by means of cars. At the river is incalculable water power, and wood is abundant. Southwest of these ledges half a mile is a mammoth lode, named the American Eagle—an extension of the Sea Fowl lode—which has been opened on the surface twenty-five feet in width, five feet in depth, and its entire length. A quantity of the ore was taken to Pine Grove and worked in Cheever & Todman's mill, and returned $4 15 in silver per ton in a *gold mill*. With proper appliances for reduction it is believed that the ore will yield double that sum. The mine will be prospected thoroughly this summer, and quite a number of mills will doubtless be erected. The most available route from Virginia to the district is, as follows: First, to Fort Churchill; thence southwest to McCloud's and Snyder's ranch on the West Walker river; thence up the river to Wilson's ranch, and across by the old Esmeralda road to the mines—an entire distance of ninety miles, and on an excellent road. The valley of the Walker abounds in fine farms its entire length.

The Comstock—The *Trespass*, April 2d, says: The express clerk for Wells, Fargo & Co. informs us that the bullion shipped from the Virginia office for the month of March was valued at $782,937 45, being but little below the average shipments of preceding months. Considering the terrible condition of the roads, and the fact that many mills were idle during most of the month, this shipment is very gratifying, as a symptom of the producing qualities of the mines on the Comstock ..... The San Francisco *Stock Circular*, April 6th, says: Hale & Norcross held at previous quotations; no sales came to our knowledge during the past week. We are informed that the operations of this company are progressing very favorably. On the 24th ult. the new shaft had attained a depth of 210 feet. Savage sold at enhanced rates, opening at $2,025, advancing to $2,200, receding to $2,140, and closing yesterday at $2,170. The ore extracted during the week ending March 30th amounted to 1,524 tons, the assay value of which is stated at $55,362, equal to $36 32 per ton. This ore was taken from the sixth and seventh stations. The dumps at the Curtis shaft being still inaccessible for wagons, no work was done during the week, except in starting the third station. Yellow Jacket has been sold, to a large extent, at greatly improved figures, rapidly rising from $820 to $945, then selling at $915, and closing at $938. We are unable to gain reliable information as to the merits of this company's mine, since reports, as usual, are very tardy in reaching the office in this city, to the great detriment of many stockholders. Crown Point sold at $870@895, closing yesterday at $890. This company is still working east and west from the 500-foot station, the former drift having attained, on the 29th ult., a distance of 131 feet, and the latter 80 feet. During the week ending March 29th, 589 tons of ore were taken from the mine; the previous week 523 tons were extracted. Gould & Curry—declined from $500 to $400, seller 5, and at the close sold at $375, seller 30. The bullion receipts of this company for the month of March amounted to $52,878 47. Chollar-Potosi advanced from $253 to $271 under large sales; then sold at $262 50 and closed at $290, b. 10. In the Santa Fe station the ore is said to be 42 feet wide—the best quality of the deposit being about 15 feet wide, and the balance is estimated at $22 per ton. In breasting out south over the winze in the north end, from the first station, new shaft, the ore is 18 feet wide, and it is thought will yield $40 to the ton. During the week ending March 29th, 1,342½ tons of ore were sent to custom mills; previous week, 1,093 tons .... Imperial has been sold to a considerable extent at an advance, improving from $230 to $250, closing at $246 bid. This company has commenced an incline on the front ledge of the Holmes mine, and it is said are producing more ore from this point than can be worked at their Gold Hill mill. The Imperial-Empire shaft is now down and timbered 842 feet. Opeir opeend at $232, and closed at $234. Since the first instant, this company have been steadily drifting south on the tenth level. .....Empire receded from $185 to $166; then sold at $174, and closed yesterday at $175. Belcher sold at $110@$123 50. Confidence at $33@$36. Overman, $9@14.....The following is a tabular statement, giving the dividends paid and assessments levied by the various claims on the Comstock lode for the first quarter of 1867, as compared with that of 1866:

DIVIDENDS—First Quarter, 1867.

COMPANY.	January.	February	March.	Total.
Crown Point	$40,000	$80,000	$48,500	$168,500
Empire M. & M. Co.	12,000	18,000	12,000	42,000
Gould & Curry	....	....	....	....
Hale & Norcross	40,000	50,000	50,000	140,000
Imperial	32,000	48,000	60,00	140,000
Savage	....	80,000	80,000	240,00
Yellow Jacket	60,000	....	....	60,000
Totals	$284,000	$246,000	$250,000	$790,000

First Quarter, 1866.

COMPANY.	January.	February	March.	Total.
....	....	....	$30,000	30,000
....	....	....	....	....
....	60,000	....	60,000	....
....	....	....	....	....
....	....	....	....	....
....	....	....	....	....
....	....	....	....	....
....	$60,000	....	$90,000	$90,000

ASSESSMENTS—First Quarter, 1867.

COMPANY.	January.	February	March.	Total.
Alpha	$5,250	....	....	$5,250
Baltimore American	15,600	....	12,480	28,080
Belcher	....	25,000	....	25,000
Bullion	....	30,000	....	30,000
Confidence	4,000	....	....	4,000
Daney	....	....	....	....
Exchequer	....	....	....	....
Lady Bryan	....	....	....	....
Ophir	84,000	....	....	84,000
Overman	....	....	32,000	32,000
Sierra Nevada	1,500	....	....	1,500
Yellow Jacket	....	12,000	....	12,000
Totals	$110,200	$76,000	44,480	$230,780

First Quarter, 1866.

COMPANY.	January.	February	March.	Total.
....	....	....	....	....
....	....	....	$5,200	$5,200
....	....	....	62,400	62,400
....	$25,000	....	25,000	75,000
....	....	....	....	....
....	....	4,000	....	4,000
....	....	....	16,000	16,000
....	5,000	....	5,000	10,000
....	....	....	....	....
....	32,000	48,000	....	80,000
....	....	....	....	....
....	....	6,000	....	6,000
....	....	150,000	....	180,000
....	....	....	....	....
....	$62,000	$208,000	$113,600	$474,600

The *Enterprise*, April 9th, says: A body of very rich ore, five feet thick, was struck on Sunday last at the 500-feet level of the Crown Point mine, in the front ledge. Considerable excitement was created by this new development, which promises to be an extensive one, and stock in the company rose in consequence over $500 per share. Much inquiry was made for Crown Point stock. We are glad we held fast to ours. No one can buy any Crown Point from us. ..... The same paper, March 30th, says: The following is a statement of the amount of bullion shipped or received for assay during the past week: From the office of Wells, Fargo & Co., in this city, there were shipped 3.605 pounds of assayed bullion, valued at $103,436 18; from their office in Gold Hill, 2,249 pounds, valued at $91,232 96. The amount of crude bullion received for melting and assay is as follows: Theall & Co., of this city, 18.960 ounces; E. Ruhling & Co., of this city, 23,830 ounces; Leopold Kuh, of this city, 3,170 ounces; George W. Dorwin, of this city, 1,400 ounces; Edwards & Wiegand, Gold Hill, 22,241 ounces; H. Harris, of Gold Hill, 2,290 ounces; Van Wyck & Co, Gold Hill, 24,954 ounces ..... After several weeks cessation of hostilities, the bowels of the Sierra Nevada mine are about to be reopened and disturbed to their uttermost depth and extent. It will be recollected that in drifting east from the bottom of the new shaft last fall, or the early part of the winter, the front ledge was struck, being probably the same or one as good as that of the Hale and Norcross and Savage Companies, which yields such rich returns at the present time. On cutting through the casing of the ledge, however, there was a huge rush of water from it, which proved too formidable to encounter or overcome with the pump and machinery then being used. Under the direction of Mr. Apple, the energetic and very efficient superintendent, the pumping and hoisting machinery, of the most substantial and effective description, has been placed in position, and will be started into full operation to-day, or within a day or two at farthest, propelled by an engine of 100-horse power. The pump is fourteen inches in diameter, and although the water in the shaft is two hundred and fifty feet deep, it is confidently expected that the mine will be entirely freed from this impediment within three weeks, and the interesting point to stockholders once more attacked, viz., that front ledge. What little ore was taken from the ledge at the time the body of water was tapped was well filled with rich sulphurets, and of a character to justify the most sanguine anticipations. The developments about to be made in the Sierra Nevada mine are of great interest, not only to stockholders, but especially to Virginia, as well as to the county and State at large; for the northern portion of the Comstock has latterly fallen somewhat into disrepute, by reason of no new bodies of good ore being found. We trust this impression is about to be dispelled by the success of this mine.

Pahranagat.—Wm. W. Henry, recently from Pahranagat, writes to the *Vidette* as follows: "The first impression I had upon arriving in the Valley was not

very favorable, owing perhaps to the monotonous appearance of the country, and the apparent stagnation in business; but a hasty glance around and a little posting up, made matters appear quite different. In the valley, however, one does not feel that buoyant spirit which he experiences at the mines, some twelve miles west. There the atmosphere and water is much more wholesome and invigorating than below, and there is also more of the usual stir and bustle incident to mining camps, which a miner expects to find in such localities. Although there are no mills yet in operation at these embryotic cities near the mines, or any great noise made about them, but, judging from appearances about Logan Springs, I should think that something was to be accomplished, as load after load of machinery was being delivered. Dr. Conger has erected smelting works there that are a credit to any place; but unfortunately the character of ore so changed below the surface, that he was compelled to abandon the smelting process. The furnaces, however, he informs me, are even now necessary, in connection with his mill process, for an economical working of certain classes of ores, which are quite abundant in all of the mines, as far as shown by developments. The Pioneer company, represented by Mr. Raymond, located their mill in the valley, distanced from the mines about twelve miles, necessitating, by such a move, quite a heavy additional expense in getting their ore and wood down; and many are of the opinion that it would have been much better for the company to have expended some money in prospecting for water near the mines, rather than pay the perpetual and heavy tax on wood and ore. However this may ultimately prove, the company still seem satisfied with their location, and are very sanguine of great success. Messrs. Nichols & Kennedy are prospecting vigorously for water in Silver Canon, and are confident that their labors will prove a success, from the fact that they have already struck a vein from which flows about one thousand gallons of water per day. It is to be hoped that with their indomitable energy and untiring perseverance, they may succeed in finding water sufficient for milling purposes, as Dr. Conder and J. A. Bidwell have done. The Crescent Silver mining company, represented by Mr. Julius A. Bidwell, are pushing forward the development of their mine with vigor, and are also making preparations for their mill at the Hatfield Ranch, where abundance of water has been obtained at a trifling expense, and only about one mile from their mine. This indeed is very fortunate for the company; and, with the able management of Mr. Bidwell, it can hardly fail of success. The water-question is all-important in this district, and had other companies more duly considered its importance near to their mines, it no doubt would have been much better for them and the district. In regard to the richness and extent of the mines in this district, a great deal has already been said, and very much, no doubt, based more upon hope than knowledge. To see for myself respecting these statements, in company with others, I visited the Illinois, Webster, Virgin Silver, Utah, Bay State, Cincinnati, Ely & Sanderson, and many others; but as the above are considered the most promising by many upon the eastern slope of the mountain, I make notice of them only. Upon the Illinois we found three tunnels, running into it, being prosecuted with considerable vigor. In the lower one, some sixty feet under the out-croppings, nothing had, as yet, been struck; but in the middle tunnel, which cuts the lode some fifty feet below its summit and out croppings, a small vein of silver had been struck, but of rather a rebellious character. Also on the croppings at the summit, some indications of rich ore were observed. A shaft was being sunk in the Webster, and some prospecting being done on the Virgin Silver—both of which carry very rich ore at the surface. On the Cincinnati and Ely & Sanderson work for the present had been suspended. Having spent some time in this part of the district very agreeably, I gladly accepted an invitation from the able and gentlemanly superintendent of the Alameda Silver Mining company, Dr. O. H. Conger, to visit the List Lode. This lode is situated about three miles from their works, on the western slope of the mountain. After having heard so much in regard to it, I really was not prepared to see such bold and continuous rich out-croppings as it presented. It is unlike any upon the opposite slope in most of its physical features. And, what is very singular, not an indication of another lode is found within a mile of it in any direction. Its discovery was also quite singular, and in many respects remarkable. An Indian by some means became dreadfully frightened, and came to the gentleman whose name it bears for protection, offered to show him "pana-ka," their name for any kind of ore, which resulted in the discovery of the lode.

Mammoth.—A correspondent of the *Reveille* states: Near the first of next month Captain Knapp intends to resume work on the great shaft of the Mount Vernon Company, by putting on three shafts and sinking a hundred feet deeper. This is the kind of work we need, and plenty of it. One such shaft will do more to establish the value of the mineral deposits of the district than all the numberless "gopher holes" which now dot the surface. The parties in the East who are interesied in the Albany series of ledges have transmitted funds to J. C. Merrill for the purpose of prospecting them thoroughly, in order that their value may be ascertained. He has commenced a shaft that will cut the main ledge about 100 feet below the surface. As soon as the weather will permit, Major Gillett will open work on the Ural Silver Mining Company's ledges, and whether we are to have a quartz mill erected here the coming season will depend much upon the result of his explorations. The Tyler Brothers have struck a good vein of mineral in the western drift of their shaft on the Sunlight; they are also drifting to the eastward. Messrs. Ferguson & Co. are pushing down the shaft on the American Flag, and are putting the vein in good shape to yield ore. Owing to the fact that but few claims in this district are properly opened and protected for work during the winter, very little has been done, except upon those mentioned.

Reese River.—The latest achievement of our mines is that of the little Timoke, on Lander Hill. Its superintendent, W. F. Leon, sent to the Keystone mill for reduction 50½ tons of first-class ore. The work has been accomplished handsomely by the mill, as the shipment of bullion, completed yesterday by the National Bank, will amply show. The 50½ tons of ore yielded the large sum of $18,840 20 in silver bars, between 850 and 900 fine. This yield was at the rate of $373 15 per ton, and is a great increase over the yield of the ore previously obtained from the mine. During the quarter ending 31st December, 1866, the books of the County Assessor show that 80 tons of ore from the Timoke mine were worked at mill, which gave an average yield of $148 41 per ton. We were informed by the Superintendent that the amount obtained from this last working of 50 tons would exceed the expenditures upon the mine in the course of its extraction, and including the milling, upwards of $10,000. The last lot worked was sulphuret ore of a beautiful appearance, every piece of which bore the glowing tint of ruby silver.....Mr. John Frost, the Superintendent of the mines of the Manhattan Company, is developing its North Star mine handsomely. In the level which is being pushed to the west, the vein has assumed extraordinary proportions, and instead of being decomposed, it is compact and firm. Before striking the ledge at this point, they passed through a section, about twenty-five feet in length, containing mineral rich in silver, but abounding in the baser metals. Cutting through this, they entered the rich chimney, where the vein is about four feet thick. They do not select the ore taken from this portion of the vein, but work the entire mass, the assays of the pulp yielding, as we are informed, more than $300 per ton.—*Ib.*

Reveille.—We are informed that the Bullion Company have extracted a considerable amount of good ore from their Fisherman ledge, and it is estimated that not less than $8,000 are contained in the dump, and they are still pushing the work. The ore will be hauled here for reduction .....Yesterday Mr. Henry brought into town from the Reveille district a good collection of specimens of the ore taken from thirteen locations made by Brobant, Kellogg and Henry. One large piece, from a ledge called the Star of Nevada, weighs 150 pounds. The samples are good-looking ore, and resemble the general character of the mineral brought in from that district. The locations lie a short distance south of the original discoveries in the district. Six tons of ore, embracing a lot from each of the thirteen locations, is now being hauled here for reduction. We learn, too, that the owners are engaged in working their claims, for the purpose of furnishing ore to the Rutland mill in the district, which will be completed in a short time. They have not been troubled with snow in the district, and prospecting has had few interruptions.—*Ib.*

Cortez.—We learn from Mr. A. Casamayou, who has just returned from the Cortez district, that a force of men is employed on the Cortez Giant of the Mount Tanabo Company, extracting ore for the mill. He represents the stratum of pay ore in the Giant, at the point of excavation, to be from sixteen feet to eighteen feet thick. There are several other points in the width of the enormous ledge, deposit or mountain of mineral, which will undoubtedly yield good paying ore. At present the snow is deep on Mount Tenabo, and work cannot be prosecuted on many promising claims, but as soon as it disappears from their locality, the left mountain will be rendered vocal by the earnest blows of many miners. At the earliest possible moment work will be commenced on the St. Louis and the Nebraska, both of which lie higher up the mountain than the Giant. The former mine has yielded, perhaps, the richest ore in the district.—*Ib.*

Palmetto.—We are informed that an extraordinary vein has been developed in the Palmetto district, which lies about thirty miles a little west of south from the Silver Peak district. The vein was discovered and located last year, and from its croppings and surface indications, as well as the assayed character of its mineral, it was believed by its owners to be first-rate property. A contract for opening the vein by a perpendicular shaft some seventy feet has just been completed, the result of which more than justifies the expectations of the fortunate owners. The vein of the Kentucky (so it is named) pitches into the hill at an angle of 45° to 50°, and it is cut at the bottom of the shaft about 100 feet on that incline. The workmen cut into the ledge nine feet, without exposing the foot wall, and they know that it is fully seven feet thick at the depth of the shaft. The ore taken from the bottom of the shaft is very compact, and preserves the high grade of that found on the surface. Assays of the ore, taken from the greatest depth of the opening, yield from $700 to $800, and it is estimated that the whole mass of the ledge will work in the mill not less than $100 per ton. The Palmetto district is open at all points, and abounds in wood of excellent quality for fuel. Fish Lake valley—one of the finest bodies of arable land in the State—lies on its western border, and will afford supplies for a large population. It is but a short distance from the Great Salt Basin, the most extensive deposit of salt yet discovered. With these advantages, Kentucky ledge, of great proportions and yielding superior ore, must be regarded as one of the celebrities of the State.—*Ib.*

Milk Springs.—At a meeting of the miners, held there on the 27th of February, 1867, the boundaries of the district were declared as follows: Beginning at the southwest corner of Empire district, in the centre of the mouth of Copper Spring canyon, and running up the centre of said canyon in a northwesterly direction to Blue valley, 10 miles; thence running in a southerly direction along the foothills, 10 miles; thence in an easterly direction across the ridge to Hot Creek valley, 10 miles; thence northeasterly along the foothills to the place of beginning, 10 miles.

California.

Calaveras.—The *Chronicle* gives the following items of mining news from the Chile Gulch district: The long, heavy rains which we have experienced the past winter, have furnished an abundant supply of free water, and we were much surprised at the number of miners at work, in placer diggings, throughout the entire length of the gulch. Paul & Co. have recently struck through into pay dirt, of great richness, and the claim is one of the most extensive in the county. The tunnel through which the claim is to be worked is 859 feet in length, and runs the entire distance through solid granite. It has cost three years' constant labor and $30,000 to complete it. The gravel at the point where the tunnel breaks through the bed rock, pays an average of $14 to the car load, and still the main lead has not been reached. Martin & Co. have an extensive hydraulic claim in the same vicinity, which pays remarkably well. Water is conveyed to the claim through iron pipes, a distance of 1000 feet, with a fall of between 300 or 400 feet. At the Henry Guy claim, Mr. Shaw is engaged in running a bed rock tunnel through which to lay his sluices. The tunnel has already been driven to a point beneath the gravel, and as soon as a streak of extremely hard ledge is gone through, a shaft will be sunk to intersect the tunnel, and operations commenced. An iron pipe, 800 feet in length and seven inches in diameter has been laid in which the water is to be conducted to the claim. Diacre & Co., who purchased the old Bob Paul claim, are doing exceedingly well. Last week they cleaned up $400, the result of five days' work. The Copperopolis *Courier*, of March 30th, says: We were shown some very rich specimens of gold-bearing quartz on Wednesday last, taken from a claim and extension on the eastern side of Salt Spring Valley, directly opposite the Gold Hunter claim. In the specimens from the main claim it was hard to tell which predominated, the quartz or the yellow metal. The lead is quite extensive, and our informant says that the lucky owners have pounded out with a mortar, over $1,000 in solid gold. The rock taken from the extension has been tested, and shows $60 to the ton.....The San Andreas *Register*, of March 30th, says, the Spring Valley mill is now in full blast, and rich rock is now being taken out.....A *Times* letter from Camanche, March 26th, says: Mr. Joseph Zimmerman recently cut a tunnel into a hill, and from the first pan of dirt prospected, washed out 20 cents. A little further in, he took out a second panful of dirt which yielded $1 50. He then, in company with three others, took up four claims, under the new mining laws adopted March 10th. This discovery created quite an excitement. A great many other claims were immediately taken up in the neighborhood, some of which prospects from one cent to twenty-five cents to the pan, paying from the top down. There are from two to twelve feet of gravel. Water to these claims will soon be supplied from the Mokelumne Hill ditch. There are from five to eight miles of this mining ground, some which, a year from now, I think will pay as high as $25 per day to the hand.

Kern.—From the Havilah *Courier*, March 30th, we learn that the last clean-up of the Joe Walker mine yielded $10,000 after a run of ten days. Large as it is, this is not over the average yield of the Joe Walker. Mining interests in this county are begining to attract merited attention from capitalists and miners..... Long Tom correspondence of same, give these items: The Long Tom mine has been worked to a depth of 200 feet, through a mass of gold-bearing quartz, averaging in width from five to six feet. The yield cannot be less than $20,000 per month. The company has a 10-stamp mill in operation day and night. Work on the Kirby Smith is being prosecuted with great vigor and promises a good yield. Pyle & Collins, owners of the Robert Johnson, are crushing in arastra a good quality of quartz. I am informed that $60 per ton

was refused for quartz on the dump. The Tucker Brothers and Bell are grinding away with arastras on A No. 1 quartz. Work has been suspended on the claim of French, McDonald & Co., until supplies and machinery can be brought in.

Placer.— The *Herald*, April 6, says: At the Mallett Cement claim, they have evidently struck into an old river channel, which is rich in gold. Ground has been taken up adjacent to the Mallett claim, and parties owning it will soon erect a mill..... The *Gazette*, of April 3d, has the following: Frank F. Adler, who arrived from Meadow Lake on Monday, brought the amalgam from 15½ tons of ore from the Golden Eagle ledge, and crushed at the company's mill. According to previous retorts, the yield of the last crushing will be $24 per ton. The California company have struck their ledge at a depth of 90 feet, and are running through the foot-wall. The mill of the Mohawk and Montreal company will be completed and in running order about the middle of this month..... The Harpending mine is proving very rich. They made a four days' run this week with 20-stamps, and cleaned up 500 ozs. of amalgam, which will yield $3,500 in gold. In a few days more they will commence running their other 20 stamps. .....The following items are from the *Stars and Stripes*, March 27: Mr. Rousch recently purchased one-half of the "Old Rip" claim, at Bath, paying therefore the sum of $10,000 cash..... Dr. E. B. Harris has bought the Ambruster claim, on Georgia Hill, near Yankee Jim's, for $10,000, after having had, by previous agreement, control of the claim for sixteen days. There is a five-stamp mill near the mouth of the tunnel. The Ambruster is an old hydraulic claim. The bank presents a face 60 or 80 feet in height, and perhaps 120 to 150 feet across. The claims have a frontage of 300 feet, and run back to the centre of the hill. The streak of blue cement is four feet thick, and the lower ledge is 10 feet above the bed-rock. Several pans of dirt were tried while we were present, yielding from 20 to 25 cents per pan. This cement would pay fairly without crushing, but as it is easily crushed, and two Chinese drifters have been able to keep five stamps at work, it must, if it holds out, pay enormously..... The Dewey claim tunnel at Bath (or Sarahsville) is 2,000 feet long, and is so straight that one standing as the back end can see the mouth. The "pay dirt" is a streak of cemented gravel about 3 to 5½ feet in thickness, which is about 100 feet above the bed-rock. It pays $5 50 per ton. The claim has been prospected throughout a length of $2,000 feet, and a breadth of 200 feet. During the past year, the aggregate receipts were a trifle over $105,000, and the aggregate expenses a little less than $65,000, leaving $40,000 to be divided between the four shareholders, and a safe surplus in the treasury. The price paid for the claim by the present owners was $11,000 each..... At Dutch Flat and Gold Run, within a circle of a radius of a mile and a half, there are about 45 hydraulic claims now worked. The daily product is not far from $6,000.

Alpine.—The *Miner* reviews the situation as follows: In Mogul district the Leviathan mine shows rich smelting ore. In this district the Mowyer tunnel is close to their lode, and the Tarshish has recently cut into quartz. The American, Active and Monitor Consolidated companies will each sink a permanent shaft on well known veins belonging to them, respectively, the Americag, Constitution and Hercules lodes. Mr. Ray is working on the Mountain lode, a continuation of the famous Florence. The Winchester company will, as soon as any kind of reduction works are up make another trial of their ores. In Silver Mountain district, the Mountain No. 1, and Pennsylvania companies, whose claims are on two of the mother lodes of that district, expect to tap their veins where they will pay, before another winter; and in Raymond district the Illinois California company are sinking the great mother vein of that region .... We take the from the Silver Mountain *Bulletin*, the following: The California Illinois company are now in with their tunnel 530 feet, having made seven feet last week. The cutting in this tunnel has been in the hardest character of rock yet found in this district. ..... In the Pennsylvania, the lower tunnel is now in 525 feet. The rock is difficult to work, except when a seam is struck; the distance run per week varying from seven to eleven feet—two shifts..... Operations have been resumed on the George Washington. Considerable damage had been done to the buildings of the company by the snow. The tunnel is to be extended 300 feet on the ledge. The rock is soft and easily worked. It is expected that two months' work will put the mine in such shape that there will be no difficulty in supplying the mill with ore. The furnaces are to be changed at an expense of $1,200. Four of the Freiberg barrels are to be removed, and their places supplied by as many Wheeler pans..... The tunnel of Mountain company No. 1 is now in 1,063 feet, having been run the week ending Saturday, the 16th inst..... A telegram to the *Alta* from Markleeville, April 3d, says: The Schenectady company have struck a very rich ledge in the Tarshish claim, at Monitor, 300 feet deep. Pure silver may be cut out of the rock, and the ore assays $500 per ton.

Nevada.—The *Transcript* reviews the prospect thus: In placer, hydraulic and quartz milling, there is a prospect of unusual activity in this county during the present season. In this vicinity, some four or five hoisting works, and several mills have been erected since last fall, and quartz prospecting is attended with excellent results. The promise of rapid advancement in this branch of mining was never greater in this locality than now. The older mines are yielding handsomely, and from them there will be a larger aggregate yield than for years. In the foot hills a considerable amount of work is being done in quartz, and the prospectors have the greatest faith in the richness of their claims. At Grass Valley the leading mines are all paying well, giving assurance of an increased yield. At Eureka, since fall, several mills have been erected, and one or two have been worked during the winter. The ledges in this locality are large and easily worked, to a great depth, and the rock is rich. It is a very prosperous mining district and is destined to make rapid progress during the next six months. At Meadow Lake much work has been done during the winter, notwithstanding the heavy snows, and the mines show a great improvement as they are opened. There is more work and less speculation than last season, and the good results are already apparent. At Washington and other places, the indications are equally encouraging. In gravel mining great energy is being manifested from Little York to the Middle Yuba, and from the foot hills to Bowman's. The old claims which have been worked for years are paying well, and many new gravel ranges are being opened. There is a prospect that the number of mills erected for working cement last season will be kept constantly at work, and the prospecting of the great river channel is attended with first rate success..... From the *Transcript*, of April 2d, we glean the following: A considerable amount in prospecting for gold is being done in the foothills, and the ledges are representing a first rate appearance. Recently Crosby & Co., commenced prospecting a ledge near McCourtney's crossing, on Bear river. The lead was eight inches wide on top, and increased until a short distance below the surface it became two feet wide. An arastra was erected upon it, and a quantity of rock crushed, the first lot paying $30 per ton. If the ledge continues to hold as good as this, a mill will soon be erected on the mine ..... The Last Chance Copper Mining company is taking steps to procure a patent to their mine under the National law providing for the sale of mineral lands. This is the first company we have heard of availing itself of the privileges of the new law. The miners, as a general thing, feel as sole as tenants of the public domain as they would as proprietors of their mines..... A mill, a short distance east of Grass Valley, was destroyed by fire on Friday night about 12 o clock. It was known as the Town Talk mill, and was recently purchased by Beatty and others for the purpose of prospecting a ledge. The property was valued at $5,000, and was insured for $2,000. The fire was supposed to have been the work of an incendiary..... A rich strike was made on Monday, in the Mattingly lead. The incline is now down 190 feet below the surface and the ledge is large and well defined. The rock contains a large amount of free gold and is, to all appearances, very rich. A company was recently incorporated to work this claim..... The same paper, of the 5th, says: A rich ledge was discovered on Wednesday last, in Deer Creek, about a mile and a half below town. The discovery was made in Leeth & Co.'s gravel claims in the bed of the creek. The rock is filled with rich sulphurets, and the ledge is compact and not broken as is usually the case with quartz found in gravel. The ledge is three feet wide. ..... The Commonwealth Silver Mining Company, of New York, have resumed work in their main level on the Almira. This claim consists of three distinct and well defined lodes, cropping out continuously on the surface nearly the whole length of the location. The Almira, which is the representative ledge, is about six feet in width, showing a good "wall." The mineral is of a class known as "free ore," which is among the richest qualities of silver ore—and regularly diffused throughout the ledge. The tunnel will intersect it at a depth of about 300 feet from the surface, by running a distance of 550 feet—200 feet being already completed. The Barker ledge, the first they will cut, will be reached in about 60 feet from where they are now at work, at a depth of some 100 feet. The Kitty Rose is probably the heaviest ledge of the series and is situate about midway between the others. Their "strike" is north and south, conforming to the "country" formation, which is limestone and slate. The Barker ledge in some respects, is the most regular, but at the depth it will be tapped by the present "level" the company do not look for much—although they have crossed within the last few feet, a "stringer" of quartz, containing "jack" and "mundic," which in this character of "fissure veins" gives great encouragement that the ledge, when reached, even at this depth, will possess great value. This level, however, is more to open the second and third ledges than the first. They have several tons of rich ore taken from the surface, while employed in stripping and prospecting, previous to the expenditure of money for the ultimate development. A wagon road is constructed to within a few feet of the dump, and everything in readiness, the moment they cut into the ledge, to commence breaking ore and hauling it to reduction works..... The works about the mine presents a substantial and workmanlike appearance, showing efficient management. The company, with this property, own several other valuable and well-known mines in Star District, which in time they intend to work. It is their intention to erect a ten-stamp mill during the summer, if their mine "pans out" as rich as they have every reason to believe it will. May success attend them, and all other mining companies who go to work legitimately, as this company have, and manifest a disposition to advance the interests of the country. .....McClean is running the Sheba mill on a lot of Yosemite ore. He has not yet cleaned up, but he is satisfied that the ore will turn out well. Next week he goes to work on rock from the Golconda, which is now being hauled for White & Webb..... McBeth & Melander are working the Little Giant. Everything looks favorable. The ledge has increased about fourteen inches in width within the last week in the tunnel following up the ledge. They are now taking out a good quality of ore, which they intend to work in the Sheba mill. The boys have put in many hard licks on their claim, and it now looks as if their reward was near at hand .....Through the courtesy of the superintendent of the Washington Mill and Mining company, Mr. W. S. Sargent, we are informed, says the *Register*, that in spite of the late severe weather, he has been enabled to prosecute work with energy on their mine at the head of Panther canon. In order to satisfy himself and the company beyond a doubt, as to the value of the veins, some months since he laid bare the surface croppings, and found the ledges large, regular and well cased, nearly the entire length of the ground which constitutes their claim. We have seen considerable of the mineral, and unhesitatingly pronounce it good. They are progressing finely with work on the tunnel, which is surveyed to develop the mine at sufficient depth to work through for years to come. The ground through which they are now running is soft. They are in 100 feet, and expect to continue 300 feet further before they cut the main vein. We are glad to learn that the financial condition of this company is on a good basis. If the company will only supply their competent agent with funds, and allow him the entire management of the mine, we have not the least doubt but that they will be rewarded by a splendid success.

Montana.

The Virginia City *Post*, March 23d, notices the first product of the Christnaught mill from Oro Cache rock which yielded fully $100 per ton, and adds: The Christnaught mill with its Chilian rollers and barrel amalgamators, is working fully up to the expectations of those interested. The four crushers have a capacity of eighteen tons per day, and the pulp so crushed will pass through a seive 900 fine. The sixteen barrel crushers are sufficient to amalgamate all the pulp crushed. On the shaft of the Oro Cache No. 2, from which ore is now being taken, there is a well-defined crevice of three feet. In addition to this, the company have been running a tunnel to tap the General Grant lode, which they had struck at one hundred and fifty feet. At latest advices they had penetrated the vein nearly eight feet and had not yet worked through it. The quartz is said to be of excellent quality ..... Owing to some alterations and repairs necessary about the Hawkeye mill, it was only run a portion of the week. Col. Posthlewaite, yesterday, deposited with Hussey, Dahler and Co., one hundred and forty-three and a-half ounces of retort, valued at $2,583 ..... Relative to the Argenta Smelting Works: Mr. Dreidesheimer, Superintendent of the St. Louis and Montana Mining company, informs us that they are fully prepared to turn out silver by the ton, as soon as the weather moderates. It seems rather sanguine to speak about turning out a ton of silver every fortnight, but the following figures warrant it. The rock yields on an average, $320 per ton, which can be extracted within .07 per cent. of that amount. The capacity of the works is ten tons per day, yielding $2,976; in fourteen days, $41,664. Rating the silver at $16 30 per lb., the yield in fourteen days would be 2,556 lbs., leaving a large margin for contingencies..... Butte City correspondence of the same paper states that: There is an almost unlimited amount of side hill placer mines below the ditches that are now nearly completed, for the conveyance of water for sluicing, as soon as old Sol melts the snow and extracts the frost..... A Rochester gulch correspondent of the same paper writes: Some little work is being done on lodes already discovered. Miles Cavanaugh has a shaft on the Valley lode some twenty-five feet in depth, with a splendid body of quartz, which, at that depth, increases in richness. In a former letter I gave you an account of big prospects obtained from the Watseka lode, by Messrs. Mathuss and Powers. They have another lode, called the Julia Holmes, with a shaft on discovery claim twenty-five feet deep, which almost equals the Watseka in richness. They have now commenced a shaft on discovery claim of the Watseka. At a depth of ten feet they have a fifteen inch crevice of solid brown iron quartz—and very rich, almost every piece showing gold visible to the naked eye. .....A Bannock correspondent states that Smith & Gracter are making extensive preparations to mine. The company intend bringing in a new ditch and will give employment to a good many hands..... Prospectors have returned from Grasshopper unsuccessful, but still confident of ultimate success..... High-

land correspondence dated Red Mountain City, March 5th, states: Many new claims have been opened this winter that prospects as well as the celebrated Mansfield claim. Mr. M. works four men, and averages seven hundred dollars per day. Our placer mines are more extensive and better supplied with the essential for successful operations than any heretofore discovered in the Territory, not including the celebrated and world-renowned Alder gulch. Our mountain sides, in every direction, are a perfect net-work of mineral-bearing ledges; gold predominates, but quite a number of silver-bearing ledges have recently been discovered. On the Balarat discovery, a tunnel one hundred and sixty feet in length, has tapped the ledge at a depth of forty-five feet, perpendicular. The ledge at this depth is twenty-eight feet in width, and prospects splendidly in free gold. It is the intention of the owners to erect three arastras, and have them completed by the first of May. On the Golconda discovery, a tunnel one hundred feet in length has been run. By careful measurement, they have ascertained that they are now within forty feet of the ledge. The company employ two set of hands and expect to tap the ledge by the 15th inst. Many new buildings are in process of erection, and many more are in contemplation. Before the ides of November, we shall stand foremost among the bullion-producing sections of the Territory. All we want now are mills and capital to assist in the development of the mines. Many very promising-looking gulches in this vicinity have never been prospected, and many fine-looking bars have never been staked. The mines already discovered, will give employment to 5,000 men, and there is plenty of ground left for all comers.....A Summit correspondent states: Some two or three different companies are at work upon the Oro Cache, and all taking out good ore. The Excelsior company are about starting their tunnel for the John How lode. Sufficient work has been done on the surface to prove that it is a very valuable piece of property. The Scranton mill is not running at present. There is not much doing in the gulch, the winter having been too severe to work. The Harris' brothers have run their tunnel into Eagle hill 375 feet. The greater portion has paid well, and as soon as they get water enough to work with, we expect to hear of their getting big pay. Above, and on the same side of the hill, is Layton and Wildman's tunnel. It is in fifty feet and not through the rim-rock. On the opposite side of the hill T. L. Miles & Co., have got their pay dirt and are taking it out, but not washing it. They are waiting for more water and warmer weather. It prospects well. On the opposite side of the gulch is Mr. Boardman's tunnel, which he is running for claim No. 17, on the Kearsarge lode. The tunnel is seventeen feet in and is to be run some sixty feet further. A little further up the gulch is A. A. Nasler & Co.'s tunnel. They are in 196 feet and are after the Butler lode. The Lucas company are taking out some excellent ore, but have had to stop sinking until they get machinery up to hoist the dirt and water. Just above the Lucas mill several companies are at work on the bar, and they are being handsomely rewarded .... Jefferson City correspondence dated March 9th states: Already prospectors have arrived, eager to commence operations where quartz is so abundant and precious. The Argentine and Axe lodes continue to sustain the good reputation universally given to them, and steadily increase as work progresses. The Gregory lode is every day giving more and more satisfactory evidence of its inexhaustible wealth. The shaft upon this lode is now one hundred and thirty feet in depth, the crevice is eleven feet wide; all the ore has been saved, and already there is mineral enough excavated to occupy a mill several months after its erection. This, I consider the right way for capitalists to realize a speedy return for their expenditures. Send men and money to develop the mines prior to sending machinery, and then they will understand what machinery would be best adapted to working their quartz; where to locate it immediately upon its arrival, and there would in consequence be no uncertainty attending their enterprise.....The *Post*, March 16th, says: The Hawkeye (Postlewaith's) mill cleaned up on the 10th inst., from five and a-half day's run, 345 oz. of retort; value, $5,208 25 coin. $7,600 greenbacks.....A correspondent of the Helena *Herald*, under date of March 17th, writes from New York gulch as follows: Several contracts have been let on different quartz lodes, among which are arrangements for taking out ore from the Little Giant and Excelsior, both of which are improving splendidly as they go down on them. They are widening and producing a superior quality of rock well studded with the precious metal. Mr. Hendrie is piling up rock at his mill, preparatory to another start. The Pioneer (Simpson's) Mill Co. are getting out rock for their mill, and many private enterprises are being pushed along with commendable energy. There has been considerable excitement here of late, in regard to gulch mining. Two new gulches have been struck during the past week, within three miles of this place; very good prospects have been found, and a large amount of ground has been staked off. There have also been made some very valuable discoveries on the Park, between here and Cave gulch. In one place a pay streak has been found from ten to twelve feet wide, that prospects from twenty-five cents to $3 50 per pan.....A Butte City correspondent of same paper writes: There is good paying ground here, sufficient to furnish employment to one thousand men. Claims opened pay from ten to fifty dollars per day. Wages per day will be from six to eight dollars to the hand, and work will probably commence about the 20th of this month. The quartz lodes in this vicinity have proven to be rich without a doubt; the Parter Brothers & Co. having erected a smelting furnace and practically tested several of the leads in this district, and there are other parties now making preperations to erect another on a more extensive scale. .....Charles Rumley writes concerning the Flint creek silver mines as follows: The Great Republic lode, discovered by C. A. Bell, yields by my analysis, to one ton of quartz, $367 78 in silver. The Franklin lode, discovered by Benjamin Franklin, carries a vein two feet wide and yields to one ton of ore $150 89 in silver. The Plymouth lode, discovered by C. A. Bell, has a four foot crevice; ore unusually even and all alike throughout; one ton of rock yields by assay $235 72 in silver. The Silver Crown, lately discovered by William Mathias, at a depth of six feet, presents a firm, well-defined vein, said to be very desirable on account of the very handsome ore it yields, and its distinct, traceable outcropping; it yields to the ton of ore by assay $275 21 in silver. The Poor Man's Joy, discovered by C. Frost. At a depth of six feet this vein measures four feet in width. You would probably have thought this lode well-named had you seen the brilliant button of silver, a specimen therefrom so kindly and gently yielded, by a quiet heat of the furnace, which proved the ore to contain in one ton $339 39 in silver. The Lily lode, discovered by C. A. Bell. Specimens from this lode are very beautiful, containing considerable copper and some gold, otherwise its composition is similar to the aforementioned. It is opened only a few feet in depth; one foot wide; outcroppings very marked; assayed to one ton of quartz $228 27 in silver. The Camden lode was discovered by M. Fullerton, who is sinking a shaft on the discovery claim. The vein, very distinct, is three feet wide; assay rather light. Mr. Fullerton will express me a few specimens when he has fairly opened the vein, when we may hope for better results. One ton of ore yields $65 in silver. The Bowling lode, discovered by B. Franklin. A shaft is sunk on discovery claim seventy-five feet; vein four feet wide. One ton of ore yields $465 20 in silver. The P. G. lode, discovered by D. Brown. At a depth of eighteen feet, the quartz even and all alike, measures twenty inches wide. The owners are sinking a shaft to intersect the vein at a depth of perhaps sixty feet, and expect to strike it in a few days. This ore is very superior, yielding its silver with very little resistance, as may be easily known by the number of rings, emblems, chains, charms, &c., made and worn by the owners and their neighbors. They pulverize the ore in a hand mortar, amalgamate in a gold-pan, retort, and melt the silver so collected. By this rude method they have extracted several pounds of the precious metal, without refining, is worth over one dollar per ounce, as determined by analysis. Specimens of this rich rock may be seen at my office, in and through which the snow white silver, so plainly visible, tells its own story. Without comment I will close by stating that the last assay of this ore gives to the ton thereof $2,902 90 in silver.....The same writer recently paid a visit to the Whitlatch Union mines, of which he gives the following interesting particulars: Alighting from our sleigh a booming sound and slight trembling of the earth gave us to understand that powder, the powerful assistant of the miner, was doing its heavy work far, far below. By invitation we follow the foreman, lighted candle in hand, recognizing the incline on claim No. 3 west, as we saw it to the depth of eighty-three feet, and informing you in December last, the vein at that point measured ten feet in thickness. In a little over two short months, how marked the change. We continue down the incline, and at the depth of one hundred and two feet, stand gazing in admiring wonder at the grand development of nature. Here the opening of the vein is tremendous. Call it a cave, cavern, palace, what e'er you may, any name connected with the grand, voluminous or beautiful, may for a moment apply with a pleasing comparison. A forest of timbers, varying from sixteen to twenty-four inches in diameter, standing in close proximity, are used as pillars for supporting the hanging wall, which presents a smooth and regular surface, some eighteen to nineteen feet over head, and as the distant gloom encircles the rays emanating from the light of many candles, fantastic objects may be imagined "flitting hither and thither" as the busy miner wields the pick or shovel, casting shadows that blend with the vanishing outlines of the vaulted chamber. At this point the whole nineteen feet in width yield excellent quartz. Eight hundred tons have already been taken therefrom, and the returns from the Hendric and Turnley mills has told a golden story for the Whitlatch Union, one of the gold-bearing mines of Montana. A full complement of miners are employed day and night, and as every ton of quartz is extracted so much greater is the satisfactory proof of the continuity of the vein, it being now settled in the minds of experts, the bottom thereof can never be found by man.

Colorado.

We take the following from the Central City *Times*, April 23d: The Gunnell Gold Mining company took out, during the week ending yesterday, 145 ounces of gold; the Black Hawk company, 254 ounces; the Smith & Parmelee, 66 ounces; the Chemung company, 36 ounces. Other companies were not reported. The banks shipped as follows: Rocky Mountain National Bank, 356 ounces; Warren Hussey & Co., 556 ounces; Geo. T. Clark & Co., 239 ounces. Total, 851 ounces; valued at $17,000.... This week the Gunnell Gold company's mill yielded two or three ounces of gold to the cord more than the previous week's run. The yield for the week was twenty ounces more than the previous one, and not near as much mineral treated. Mr. Fitzpatrick hopes to improve still further on the ensuing weeks' runs. The one hundred and forty-five ounces for the past week, which we saw at Hussey & Co.'s bank, for shipment, is worth nearly $3,000. The returns from the other mills (which ship by Wells, Fargo & Co. weekly) will be in to-night and appear in full in to-morrow's issue.....From seven hundred pounds of silver ore from Georgetown, which was treated to-day at the California Reduction Works, Excelsior mill, below Black Hawk, there were forty pounds of amalgam obtained, which will net about seven pounds of pure silver.....The Quartz Hill tunnel is in to the depth of one hundred and twenty-seven feet, though the rock is said to be related to adamant, it is so hard.... Cheney's mill is reported to be doing a good business, and so are several others at this time. Next week's yield of the ten or twelve well-conducted mills in these mountains will amount to something worth mentioning. As it has been here all winter, there was a great deal of precious time wasted even by those that kept at work. The winter was to blame for some of it, to be sure.....The Black Hawk company's mine on claims one, two and three, on the Gregory, never looked better than at present. The foreman, Mr. Lynn, has the timbering and the whole interior arrangements in the nicest shape, to the depth of four hundred and thirty feet. The mine is turning out the best class of ore, and everything connected with the working order of things is truly fine. The company's twenty-five stamp mill is constantly kept busy, on the mine, and also their eighty-stamp establishment down in Black Hawk.....The *Daily Times*, same date, says: A trip through Russell and Idaho districts, last week, developed the fact that there is but little open air mining going on, the great depth of snow that yet, in many places, covers the ground, being too great an obstacle. We must, however, expect that the growing warmth of the days will soon melt it, except in the gulleys and northern sides of the hills. Occasionally we found some enterprising miners availing themselves of the uncovered portions of the hills, and working with native-born energy. Such men we admire, and their doings we will ever be ready to record, when of interest. In Russell district we found a gang of them working on their own account, on the Empire lode, which, we were told, was discovered in 1860. There were some exceedingly rich looking pyrites being taken out, such, judging from appearances, as folks make quite a talk about when they strike it in some of the lodes with famous names, at the depth of one hundred feet and more, after having gone through "cap." But, of course, "the proof of the pudding is in the eating;" what is in the ore is yet to be proven. They say they are down about thirty-five feet, and the ore is about six inches, but the crevice between walls run four feet. The IXL is another lode some of our hardy fellow-citizens are "pitching into" on their own account, and they have some very fine looking iron alongside the shaft, which looks very much like crevice matter from Pewabic and other well-known lodes in the same vicinity. One of the miners informed us that three cords had been run by the Monnier process with great success, but he did not remember the exact result. Whatever the result, the owners are justified in getting out ore, while their means held out. Such ore, though it may not pay in a stamp-mill, or by other and various "processes," will pay by the California manipulation, unless all the usual signs of richness are a delusion. We hope that at least one large mill will soon be in operation with that mode of working, so as to keep up the drooping courage of our people, who have experienced so many years of disappointment amidst scenes of privation and toil. This shaft (the Discovery) is about forty feet deep, with a crevice of fifteen inches of solid iron. H. Glasgow and two partners are working the lode, and we wish their success equal to the appearance of it. Messrs. Lyon & Co. are working on the Discovery claim of the Pewabic lode. They have an engine over the shaft and are getting out ore merrily. The shaft is about ninety feet deep and the crevice between seven and nine feet wide, inclining to narrow. It is filled with soft copper pyrites mixed with magnesia, and is worked almost as easily as if a dirt crevice. Mr. Perrin had commenced on No. 2 East, but we learn has had to stop for the present, owing to the great quantity of water, the difficulty of that mine. That, however, can easily be obviated with a proper pump, and in no wise detracts from the value of this great lode, a dozen of which would prove Gilpin county the greatest gold region in the United States, perhaps in the world, without further evidence. Just below the Pewabic is the Kingston. Messrs. Zeyner & Briggs have commenced

taking out the water on this discovery shaft, preliminary to opening operations. This great lode is the rival of the Pewabic, many persons claiming that each is the best. The material from the Kingston is the richest in gold, but the vein is not so strong. It is only by long operations on each that their relative merits can be known. It is opened out for four hundred feet. Crossing into Idaho district, Clear Creek county, we were struck with the value of that belt which is embraced between Willis and Elkhorn gulches. Though many there appear to contain gold-bearing ores, the most of them mark it for a silver district, and of unusual richness, judging from some of the lodes. We had, however, no one to give us much information, as there is but little work being done, owing to the bulk of snow. The Franklin lode we made a careful examination of, it being a lode that must strike the eye of the most casual observer as one of unusual strength and richness. There is a pile of selected ore at the shaft that must prove wonderfully productive in silver, and we are informed that many tons have been run successfully in the smelting works of Lyons & Co. But, as that firm bought the ore, the owners of the lode do not know the result. There is also a pile of many cords of second quality ore at the shaft. We particulaaly looked at No. 4 East. This shaft is fifty-six feet deep, and its crevice varies from twenty-five to forty-eight inches, actual measurement, of solid galena, except a few knife blade streaks of other matter. The lode is opened all along from the shaft up to the discovery, and there are piles of ore at other shafts, especially at No. 3 East is there a fine lot. This lode *must* pay handsomely when worked systematically. It is admirably situated for the purpose when proper facilities are afforded, but, at present, its situation is its disadvantage, being a long way from mills and furnaces. We were shown two assays of the lode by Mains & Huchinson, which were, as follows: One, per ton, in silver, $332 92; the other, per ton, in silver, $288 18. We much regret that the owners of this lode did not send samples to the World's Fair—at least we were told they did not. A piece of solid mineral, which we saw at Mr. Hickcox's ranch, must have weighed at least thirty pounds. It was without any intermixture whatever. It would have been one of the most valuable ores sent. Just below the Franklin is the Waterloo, which seems also to be a strong lode. The galena near it appears rich. Many tons have also been smelted in Lyon & Co.'s furnace.

Canada.

A correspondent writes: Another discovery of gold promising to rival the Richardson mine was found in Madoc, lot No. 29, in the 4th concession, owned by a Mr. Gibson. From a crevice at a depth of fourteen feet, out of one pan of earth an ounce and a half of gold was taken by a Mr. Johnston, a practical miner; but the water rose so fast that the next morning there was seven feet of water in the shaft. This discovery I believe genuine, as $7,000 in gold was paid by an American, in the Dafoe House, on Tuesday, for one share. Another share in the same mine, I am told, was sold for $5,000, but I do not vouch for the latter sale.....The Hon. Billa Flint's mine, in Elgin, if I am any judge of quartz, promises to exceed anything yet discovered.....The "Cariboo Camerons" are here looking up a claim, but prudently refrain from purchasing at the enormous prices asked. If they commence work, any one who remembers their claim in Cariboo will feel perfectly satisfied that it will be thoroughly and scientifically worked.....The McLeod farm has not been sold. The parties who intended to make the purchase, I do not believe had as many hundreds as they promised thousands.....Mr. J. F. Bell, assayer, tested some ochrous earth and quartz taken from the farm of Mr. Molson in Elzevir, and pronounced it to contain 100 ounces fine gold to the ton of 2,000 lbs .... The correspondent of the *Chronicle* communicates the following news from Madoc: Matters are assuming a better state now for prospecting. The streams have fallen considerably, although they are swollen yet. The snow has altogether disappeared, and the roads are drying up; but in consequence of the vast amount of travel are exceedingly bad. Every day parties are to be seen with shovels and pans, diligently working and washing wherever they can procure a little gravel or sand from the bed of a stream. But they work under great disadvantages. These men deserve honor for their steady perseverance. This week a very important discovery of gold has been made on the property of Mr. Gardner, being lot No. 16 in the 4th concession of Madoc, two and a half miles west of Bannockburn. The shaft is about seventeen feet deep. They were troubled with water, and had troughs laid along to conduct the water taken from the bottom away from the shaft. The men threw, with the water, gravel and black sand into these troughs, and one of them noticed considerable quantities of gold in the bottom of the troughs. This discovery of course created quite a sensation. On Saturday I was informed privately about the strike. The matter soon leaked out, however, and the sanctity of the Sabbath, I am sorry to say, did not prevent hundreds from visiting the mine. But what about that day of which it is said, "Remember thou keep holy the sabbath day," when "cursed thirst for gold bears universal sway." Johnson & Co., who are working the mine, are making preparations for washing, and they expect to get good pay. Two or three blasts will bring them to a very extensive pocket of black sand and gravel; they can now push their crowbar through it to a considerable depth. They have not found any gold in the quartz as yet. I shall watch the progress of this mine and keep you posted. Two shebeen houses are already in operation near the mine.

COPPER.

Michigan.

The product mined of the Pewabic mine for the past year, according to the directors' report, was 1,791,181 lbs., yielding 75.15 per cent. or 1,346,140 lbs. ingot, against 1,731,418 lbs. the previous year—a difference of 385,278 lbs. The average number of men employed on the mine the past year was 398, against 443 the year previous; 4,168 fathom rock were stoped, against 3,680; 1,329 feet of levels drifted against 1,033, 706 feet shafts and winzes sunk against 764 feet the previous year; while the cost of all mining and surface work and stamp-house expense has been reduced $65,565 33, and the total expenses of the company $68,328 49..... The annual report of the Rockland company states: "The mine produced in the past year 186,381 lbs. of mineral, the gross value of which is estimated at $13,092 57. The proceeds of mineral actually sold was $37,335 62. The total mining expenses have been $56,440 20 (being a reduction from last year of $4,539 per month in mining costs), and the whole expenses of the year for all purposes $65,347 39. After deducting the gross value of the year's product a deficit is shown in the year's business of $22,254 82, being nearly $30,000 less than the deficiency of the previous year, to cover which an assessment of $1 per share was levied, payable June 1, 1867. The receipts for the year were $73,550 69, and the expenses $63,512 15, showing a cash balance on hand March 1st, $10,038 54."..... The Keweenaw *Times*, April 20, says: A sand blast a few days since at the Robbins vein, it is estimated, threw down between two and three hundred tons of excellent stamp stuff, included in which is more or less barrel work and small masses. In the back of the 30, south of No. 2 shaft, they are cutting a mass at ten tons. Verily, this does not prove to be a "barren cross-course."..... At the Calumet and Hecla, as was to have been expected from the nature of the ground, and the manner of working it, some little difficulty has been experienced within the past week or ten days from water in the pits. So gradually has the large body of snow disappeared, and unaccompanied with our usually heavy spring rains, that no portion of the pit workings has been materially hindered. We had hoped to get out to the mines this week, but were unavoidably detained at home.

LEAD.

Illinois.

We take from the Galena *Gazette*, April 30, the following relative to the Galena Union Lead Mining company, whose property is situated on the farm of Andrew Kilpatrick, between Elizabeth and Hanover, and near Apple river. More than twenty years ago, Hodge & Barrett, Richard Anguin, and various other parties, worked these diggings down to the water, and took out, in all, about $270,000 worth of mineral, all of which was taken from crevices, as the water prevented their sinking deep enough to strike the openings. They finally abandoned the mine, and the Galena company commenced operations, and occupied nearly two years in running a level to the diggings one hundred rods long, fifty feet under the surface, and costing $3,500. The mines are now superintended by James Johnson. The adit level being completed, the company have commenced active operations in search of mineral. They have a shaft down about 65 feet, and are pushing on as rapidly as possible, working day and night with three shifts per day. The engine pumps water up to the level, saws the wood with which it is fed, pumps the water for its boiler, and raises out rock and mineral. Wood can be purchased and delivered on the grounds for $4 50 per cord, of which a little less than one cord per day is required for the engine. The total expense of operating the mines is about $20 per day..... The same paper, commenting on the policy of expending money on grounds not yet tested, very truly adds: "It is considered very poor and ruinous policy for land-holders to disregard the suggestions of miners, experienced in our northwestern lead mining, and to allow every one whom eastern capitalists may entrust with their money, and send out here to invest it, ruinous policy indeed, to allow these enthusiastic men to expend seventy-five thousand dollars in useless 'blowing' (either above the surface or below it,) when such operations are condemned by practical workmen. These futile operations are as liable to give character abroad to the quality of the grounds, as those made by skilful men, and it will be very difficult to draw capitalists a second time upon grounds, which have bled their purses once to no purpose. Those owning grounds which they believe are mineral-bearing, cannot be too cautious how such grounds are worked, and those who are anxious to sell, will always avail themselves of every local excitement to enhance the value of their land, and may be expected to second the efforts of any speculator or mountebank, who makes a fair show of winning popular favor; but the public thrives best upon matters of fact, and truthful reports are always safest. We have to record the fact that a vast deal of money has been expended here, and the grounds not yet tested; nothing proved in fact, except the impracticability of persons, unacquainted with the manner in which Mother Nature has distributed the mineral in our lead fields, directing how to mine. The most pugnacious tenacity of purpose, backed by heavy purses, will never compensate for the want of skilful engineering, and cautious experienced brains.

COAL & IRON.

Pennsylvania.

The Pottsville *Standard*, May 4, says: The amount of black-band iron ore, shipped over the Mill Creek railroad, for the week ending April 27, 1867, was 10-14 tons; previous. 2,866 04 tons; total, 2·876 19 tons. The shipments of black-band from the McGinnes shaft have been very small for a week or two past, on account of the gang-way having been partially closed by a rock fault. The fault has been passed, and the vein is widening out. The working of the breasts will be resumed in about two weeks.....The outcrop of a vein of ore, supposed to be black-band, has been found on the Eagle Hill tract, on the hands of Messrs. Mattson, Baber and others. Many persons are positive that it is the genuine McGinnes black-band, to which the specimen we have seen bears a striking resemblance .....We learn that a vein of black-band was found, last week, on the Brock & Bast property, between Patterson and Tuscarora, and that it is soon to be developed.....The Lebanon *Advertiser* says that a vein of black-band has been discovered near Raush Gap, in Lebanon county. No particulars of the discovery are given.....The feverish excitement in regard to the discovery of black-band, which prevailed so extensively in this region a short time since, has in a great measure subsided, and has been succeeded by a more reasonable, but none the less earnest, determination to make the most of the great mineral wealth thus suddenly and unexpectedly opened to men of enterprise in this region, at the first favorable opportunity. The late opening of spring, and the death-like stagnation of almost all kinds of business at the present time, will probably delay the full development of the various veins of ore in this county, and the erection of iron and steel works here, for some time to come, but there is no doubt that both of these enterprises will be carried out as soon as a return to the business prosperity of former days shall warrant our capitalists in investing their money in the operations. There is no longer the shadow of a doubt that the black-band exists here in great quantity, in fact that a continuous vein of it underlies the greater part, perhaps the whole, of this region; besides which, there are other ores, equally available, and almost equally valuable. The time must surely come when these ores will be extensively manufactured, especially the black-band. If the present generation shrink from the experiment—if they are willing to miss their present golden opportunity of acquiring wealth for themselves and unparalleled prosperity for this region—another and more enterprising generation will develop and make use of the vast mineral wealth which lies in the bosoms of our outwardly sterile mountains. Coal alone has made rich many an otherwise valueless tract of country—black-band alone has enriched every region in which it has been found. What, then, may be the future wealth and greatness of a region like this, where both these valuable minerals exist in proximity and in plenty? We hope to see the time when Schuylkill iron shall be sought after in all parts of the civilized world, and when this whole region shall be as famous for its rich iron ores, as it now is for its apparently inexhaustible deposits of anthracite coal. .....The Shamokin *Herald* says that with the exception of the Cameron and Burnside collieries, where no general demand for an advance was made, none of operations have resumed work. The operators have agreed upon the price they intend to pay the present season, and unless a sufficient number of men to work the mines can be procured at those prices, they will remain idle until the price of prepared sizes advances to such a figure as will warrant them to pay the wages asked.....A meeting of the operators was held on the 22d ult., at which they formed themselves into an organization, under the name of the "Shamokin and Mt. Carmel Coal Exchange," which is intended to be beneficial alike to the employer and employee. The executive committee of the Exchange were requested to take such steps as shall secure the appointment of a sufficient police force for the protection of life and property in our county, as authorized under the late Police Law.....The Mauch Chunk *Democrat*, May 4, says: The Lehigh Coal & Navigation Company is about building a telegraph line from Easton to Wilkes-Barre, along the entire length of their railroad. The poles are all ready for distribution. James L. Mingle, Esq., Superintendent of the Western Union Telegraph, will superintend its construction.....J. M. Byers, Esq., has been appointed Assistant Superintendent of the Northern Division of the Company's railroad

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NEW YORK, SATURDAY, MAY 11.

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"OPERATIONS" IN MINING STOCKS—OVER ISSUE OF SHARES.

Unfortunately for the legitimate business of the stock market, there are men not inappropriately termed "bears and bulls," who, by their efforts to raise or depress prices, have obtained for the profession of stock broker an unenviable character. No villainy appears to be too great for them. They circulate rumors affecting the credit of private individuals and of great companies. They are the authors of false reports as to the relations of countries. They leave no means unemployed by which they can effect their purpose. It matters not how they accomplish it, or with what injury to others, provided they are successful. With them, as with Falstaff, "Honor is a bubble." It never fills their pockets, and it is one of the only things they seldom speculate in. Besides these gentlemen, the quadrupeds of the Stock Exchange, whose business is the inflation or depression of the markets, there is another class of swindlers who have a peculiar talent for starting bogus companies, and by the aid of the "bulls," running up the stock to a fictitious value—even if it ever had any—and then finding purchasers for it. This little game requires great tact, and is rather dangerous for an ordinary villain. To play it successfully the operator must be "bold" as well as "sharp." Another expedient for pocketing money at other people's expense is issuing more shares than the capital warrants. To do this is the perfection of financiering. It is only a skilful treasurer or an expert president, perhaps, that can be successful at this. But it is done, and much more besides. Mining investments, when well managed, are so profitable that the inducement to employ spare capital in them is very great. They are therefore those in which there is the largest amount of speculation, and consequently of cheating and other malpractices. Lately some instances of what is regarded as unfair dealing in the Mining Stock Market have been detected. In one case a gentleman, well known in the financial circles of Wall street and State street, has come to grief. There are many rumors current with regard to him. He is accused of very suspicious, if not criminal, conduct in the manipulation and over issue of shares. In default of bail he has been imprisoned, and at his trial some interesting developments of the schemes of the "rings" are expected. In the meantime we are unwilling to make any comment on this case which might be prejudicial to the prisoner, but we are very desirous of seeing some careful supervision, especially in the auditing of accounts, of mining companies introduced. In another case a firm of Central City have attempted to give title to a claim on the Gregory lode, to which, it is said, they had no right at all, save as equitable mortgagees. What affects the public most in this matter is that the peculiar nature of the title was kept secret until a large quantity of consolidated Gregory stock has been sold. It is, of course, useless to speak to speculators of the dishonesty of some of their proceedings. So long as they escape they are careless of that; but this we know, that even in stock speculations, they will find honesty to be the best policy.

FACTS ABOUT EXHIBITIONS.

The American Institute was the first association to hold "fairs" or exhibitions, at which were shown raw and manufactured products. This was shortly after the organization of the Institute in 1829. The first international exhibition "of the industry of all nations" was held in London in 1851. It occupied an area of 71,000 square yards, and cost about $1,500,000. The Paris exhibition of 1855 contained 11,500 square yards, costing nearly $2000,000. That of London in 1862 cost $3,000,000. The exhibition which was lately opened in Paris, and on the success of which the French have been so bent, is likely to be still more costly. The buildings alone have cost over $2.000.000, and the total expense cannot be less than $4.000.000. The earthworks amount to half a million of cubic yards. The iron work weighs 13,200 tons. In the machinery gallery there are of this total at least 10,000 tons. The area of the palace is 140,184 square yards. The largest exhibitors appear to be the French and English. To the former 61,000 square yards have been allotted, and to the latter 21,653. The United States department occupies only 2,700 square yards.

Expedition to the Andes.

We are glad to learn that an expedition to examine the volcanic regions of Quito is being organized by the Lyceum of Natural History of Williams College, Mass. Professors Orton and Hopkins will have the direction of it. Special attention will be devoted to zoology, mineralogy, astronomy and meteorology. We trust that every success will attend this enterprise, and that ample contributions from the lovers of science will enable those engaged in it to pursue their investigations to a very great extent.

Scientific Meetings.

AMERICAN INSTITUTE—POLYTECHNIC BRANCH.

SCIENTIFIC ITEMS—A LIFE-SAVING RAFT—SHARPENING MOWING KNIVES—IMPROVED PICTURE-FRAMES—GALVANIC INTENSITY AND QUANTITY—NOVA SCOTIAN GYPSUM.

At the meeting of the Polytechnic on Thursday evening, amongst other items of scientific news, Prof. Tillman stated that—I. A selenide of copper, silver and thalium, containing seventeen per cent. of thalium, had been discovered in Norway. II. The crystals of iodide of silver contract under the influence of heat. III. According to Kekulé, aniline may be produced by adding an acid solution of bichloride of tin to nitro-benzole. IV. M. Daubrée extracts potash and soda from feldspar, by placing the latter with distilled water in a cylindrical vessel rotating rapidly on its axis. V. According to Sjogrem, a Swedish naturalist, certain microscopic insects use metals in the manufacture of their thread, from which they form a ferruginous cocoon. This constitutes the mineral known as "lake ore," composed of twenty to sixty per cent. of oxide of iron, mixed with manganese, ten per cent. of chloric and some phosphoric acid.

Mr. John Wright exhibited a model of a life-saving raft, suitable for river steamers and emigrant vessels. The chief advantage claimed for it is the small space which it occupies. It consists of two principal parts, the pontoon and deck, both of which can be folded up when not required. For river service, the pontoon may be made of cork, but as this soon loses its buoyancy, from the absorption of the water, it is recommended that in rafts intended for sea-going vessels hollow cylinders of iron or wood be used. As this raft consists of but two main parts, it can be readily put together. The tank for the provisions is so arranged that the food does not suffer from the action of the sea-water. The cost of a raft of this kind that would hold fifty passengers and necessaries, would be about $150, or one-fourth the price of the ordinary raft.

Mr. Bradley submitted an instrument for grinding the blades of mowing knives, by which the stone can be adjusted to the bevil of the blade, at any angle. He also showed a new seat with a lateral motion, intended to obviate the inconveniences and accidents arising from cars, etc., passing over uneven ground.

Dr. Rowell, on behalf of Mr. John Sperry, explained a very ingenious process by which oval black walnut frames are made in two pieces instead of four, and the same shade of color preserved in all its parts. The process of preparing the wood by veneering has already been described in the JOURNAL OF MINING, in a report of a previous meeting.

Dr. Bradley read a paper on the galvanic battery. He defined the words quantity and intensity. By the former he understood that property of a current which gives it great power in magnetizing, heating, and decomposing. This is of great advantage in all electrolytic processes. It is produced by large cups and plates arranged as simple batteries—that is, all the positive plates being connected, and also the negative. By intensity, he understood that property which overcomes resistance, and this is perceptible in all shocks. It is produced by compound batteries, or those in which each positive plate is connected with the negative of the adjoining cup. Small cups produce as great an intensity as those that are large, but do not last as long. He wished to term that property which rendered a current capable of subdivision, thus enabling it to act on various long lines, *volume* of intensity. Electricians ordinarily speak of this property as a combination of intensity and of quantity.

He then entered into a lengthened argument deduced from experiments which he had made, to show the difference between intensity and quantity. He also explained the principles of the various batteries used in telegraphing. These are Smee's sulphuric acid, Grove's nitric acid, the chromic acid, and various forms of the sulphate of copper battery. He pointed out what he considered were the defects of these batteries. Grove's is too expensive, and emits fumes of nitrous acid, produced by local action. Daniell's sulphate of copper battery is liable to much objection. He was of opinion that one of the best and cheapest was Hill's, which is now coming into general use.

Dr. Van der Weyde, who did not pretend to follow the gentleman through all his figures, and formulas, differed from him in many points. His theories as to intensity were not altogether new, as

several years ago Owen had stated that the maximum power is attained when the intensity in the battery is equal to the resistance in the wire through which the current passes. He also objected to the statement that the nitrous acid fumes produced in Grove's battery are due to local action, and that Hill's battery is cheaper than Daniell's. They are the same, in fact.

Dr. Feuchtwanger read a paper on the gypsum of Nova Scotia. He first made some general remarks on the nature of this mineral and its geological position. According to Sir W. E. Logan, it is found extensively in Canada, especially in the Onondaga formation—which is in the upper silurian; it is interstratified with peculiar dolomites and dolomitic marls. The gypsiferous formations extend from the Niagara river to Lake Huron, the most extensive beds being on the Grand river in Michigan, below the village of Cayuga. Gypsum rocks are formed by the action of sulphuric acid—from the decomposition of sulphurets or volcanic vapor—on limestone. Gypsum is found in all parts of the world, but nowhere so extensively as at Windsor, Hants county, N. S., from which 100,000 tons of plaster of Paris are annually exported. One gentleman there exports about 20,000 tons. The deposit there is about 150 feet wide, and probably fifty miles in length.

In the discussion which followed this paper it was asked why does plaster of Paris fertilize land on which it is cast? Because it absorbs from the air ammonia, the great fertilizer.

GERMAN POLYTECHNIC ASSOCIATION.

A QUESTION FOR ARCHITECTS—IMPROVED OIL COCK—DEEP SEA SOUNDING—IMPROVED LOOM TEMPLE.

The German Polytechnic Association held its regular weekly meeting on Friday, May 3rd. Mr. Hauff, on taking the chair, inquired of the architects of the association why French roofs are so frequently applied, and if there are particular advantages in using them, or merely a matter of fashion.

Mr. Muller said he would answer the question at the next meeting, when he would give a detailed description and explanation of the subject.

Mr. Hauff next presented and explained a new and self-acting oil-cock, to be used for steam cylinders of locomotive engines, the operation of which is based upon the following principles. As long as the engine is worked by steam, no oil or grease need be introduced into the cylinder, as the steam is considered to be sufficient for the purpose; but when the steam valve is closed and the engine is running, oil or grease has to be introduced into the cylinder to prevent a rapid wearing and heating of the moving parts. The oil-cock contains two valves and a spiral spring, which has a tendency to open the valves, while the steam, exerting more pressure than the spring, shuts them. As long as the engine runs with steam the pressure of the same closes the valves and prevents the grease from entering the cylinder, but when the steam is shut off the spring opens the valves and allows the introduction of teh grease. A detailed description may be read in "Kessler's Patent Lubricator for Locomotive Engines," at the library of the association.

Mr. Lucius then explained an apparatus for deep sea sounding, and commented upon an erroneous statement previously made on the subject.

Mr. Hauff explained an improved loom temple, which serves to retain textile fabrics, while being woven at a uniform width. This invention relates to a resolving temple, with automatic tension, produced by providing the surface of the temple with oblique ribs or projections, which are furnished with spurs or with a rough surface, in such a manner that by the revolution of the said ribbed temple, a lateral tension of uniform width and density can be produced, and furthermore, the tearing of the selvedge is avoided. The temple is also constructed so that the lateral tension which it produces on the fabric can be increased or decreased at pleasure.

Mr. Hildebrandt finally gave a detailed description of the new *Herald* building and its interior arrangements.

CALIFORNIA ACADEMY OF NATURAL SCIENCES.

CALIFORNIAN PETROLEUM—COAL FROM MT. DIABLO—SALT BEDS IN ARIZONA—THE SNOW PLANT.

This society held its semi-monthly meeting at San Francisco on April 1st. Several gentlemen were elected members, and the secretaries of some foreign scientific bodies were elected corresponding members. Professor Silliman read a paper on the petroleum found in California. From a recent analysis of oil from Santa Barbara it is shown that Californian oil yields 40 per cent. of illuminating oil and an equal quantity of lubricating oil, free from paraffin. This oil burns at a lower density than that of Pennsylvania, and retains its fluidity at a lower temperature. This has lost much of its hydrogen. The Professor is of opinion that this petroleum may be used in the crude state as fuel.

Professor Blake has analysed Mount Diablo coal. It is composed of water 3.28, bituminous substances 47·05, ash 4·71, fixed carbon 44·96. This coal is not economical as a gas producer. Recently several seams of brown coal have been opened in Washington Territory. They are from two to seven feet thick. The coal is very compact, and not unlike cannel. The deposit appears to be formed of the trunks of exogenous trees. This coal partakes of the nature of coal and wood.

Mr. Hanks described a mountain of rock salt found near Muddy river, about 100 miles from the great bend of the Colorado in Arizona. It is a mile wide, and in some places four hundred feet high. The salt is pure chloride of sodium.

A specimen of the snow plant was exhibited. It was stated that it is sometimes found 8,000 feet above the level of the sea. It communicates to alcohol the odor of laudanum.

Correspondence.

[To insure insertion of Correspondence in our columns the full name and address of the writer must be given.]

Agrell's Roasting Furnace—Is it an Imitation of One Known Forty Years Ago?

CLAUSTHAL AM HARZ, Prussia, April, 1867.

EDITORS JOURNAL OF MINING:

GENTLEMEN,—In your issue of March the 9th there is a description of a so-called "Improved Roasting Furnace," a caveat for which has just been filed by Mr. Jno. Agrell, who claims as his improvement a revolving hearth and mechanical stirrers.

The "Records of Mining," Part I., 1829, contain a description and drawing of "W. Brunton's Patent Calcining Furnace," which the editor, Mr. Taylor, states has been used with complete success at one of the principal copper works of South Wales.

The whole of the materials to be calcined are exposed in regular succession to the action of the fire and atmospheric air, which is accomplished by revolving the bottom of the furnace by an upright spindle, driven by any convenient power, and by the action of fixed scrapers and ploughs, so placed as to turn over and urge the ores further from the centre, where the furnace is fed, until by the last scraper they are discharged over the edge of the bottom and fall through the door into the receptacle outside the furnace.

That this furnace, after the lapse of nearly forty years, should make its appearance unchanged, if we except the hollow shaft, which does not appear to be claimed as an "improvement," speaks very highly for Mr. Agrell's powers of imitation.

GLUCK AUF!

NEW PUBLICATIONS.

PREVENTING SCALE IN STEAM BOILERS. P. H. VAN DER WEYDE, M.D., Professor of Industrial Sciences, Girard College, Philadelphia, &c. New York. 1867.

We are indebted to the author for this pamphlet, which is a *resume* of the history of various attempts made to use electricity as a means of preventing incrustation in boilers. He points out the absurdity of several of these efforts, and explains the construction and principle of what he believes will prove a very efficient anti-incrustator. From facts which he has observed, in common with Pouillet and Duguin, he is of opinion that the particles of matter usually deposited from the water on the bottom of the boiler, are charged with positive electricity. As bodies similarly electrified repel each other, he draws from the steam, by lightning rods attached to the top of the boiler, positive electricity, and this being conducted to the lower side of the boiler prevents the usual deposits—positively electrified as already described—settling down. This theory appears to be sound, and we hope that the grand test of successful results will show that there is sufficient electricity in the particles, and drawn by the boiler from the steam to mutually repel each other.

AMERICAN PHRENOLOGICAL JOURNAL. FOWLER & WELLS, New York.

We have received from the publishers the May number of this well-known Journal. It contains a great amount of valuable information. The articles on the Metric System, the Aboriginal Legends of North America, and a poem entitled "A Spring Idyl," will be read with interest. The original matter of the Journal is ably written and the selections are made with great care.

JOURNAL OF FRANKLIN INSTITUTE.

We have received several of the late numbers of this valuable periodical. In examining that for April, we notice interesting articles on the Pneumatic Dispatch, Ventilation, Electricity, an important adjunct to the induction Coil, &c. No person interested in the progress of American Science ought to be without this publication.

MEETINGS.

Combination S. M. Co. at Room 18, 155 Broadway, May 14, 11 A. M.; Union Copper Co. of L. S., at 22 Pine st., this day, 1 P. M.; Torch Lake M. Co., at 165 Pearl street, May 30, 1 P. M.; Consol. Colorado G. and S. M. Co., at 61 Broadway, May 21, 12 M.; Grand Portage Copper Co., at 22 Pine street, June 7, 1 P. M.; Valley Coal Co., at 55 Liberty street, May 21, 12 M.; Cumberland Coal and Iron Co., at corner Broadway and Wall street, June 3, 12 M.; Guilford Copper and G. M. Co., at No. 9 North street, Baltimore, Md., May 13, 12 M.; Consumer's Union Coal Co., at 10 South street, Baltimore, May 15, 12 M.; Pacific Coal Co., at 66 Broadway, May 14; Cosmos S. M. Co., at 158 Broadway, May 21; Maple Shade Oil Co., at 524 Walnut street, Philadelphia, May 16, 12 M.; Wallace Oil Co., at 319 Walnut street, Philadelphia, this day, 12 M.

DIVIDENDS.

Savage M. Co. of Nevada, $150 (gold) per foot; Yellow Jacket S. M. Co. of Nevada, $130 (gold) per foot; N. Y. and Alleghany Oil Co., at 23 Liberty street, N. Y., quarterly, 10 per cent., payable on or after the 10th inst; Ralstor Oil Co. at Pittsburgh, Pa., 3 per cent.

STATEMENTS.

MOUNT BLANC S. M. CO.—At a recent meeting, B. B. Titcomb, Esq., was elected President, and E. G. Sheppard, Esq., Sec. and Treas.

LEHIGH COAL AND NAVIGATION CO.—At the stated annual meeting of this company, James S. Cox, Esq., was elected President, and F. Mitchell, Esq., Secretary.

FEEDER DAM COAL CO. OF PHILADELPHIA.—Chas. D. Knight, Esq., was elected President, and T. B. English, Esq., Sec. and Treas., at the last annual meeting of Directors.

MARKET REVIEW.

FRIDAY EVENING.

Gold and Silver Stocks.—Corydon brought $1 25 at first board; Columbia G. & S., $3.25; Consolidated Gregory, $6.60@6.75; People's G. & S., 45c; Quartz Hill, $1 75; La Crosse gold, 70c. The market has been unsettled during the week from causes mentioned in our editorial columns.

	April 26.		May 3.	
	Offered.	Asked.	Offered.	Asked.
Alameda	....	9 25	....	9 00
American Flag	80	95	90	95
Atlantic and Pacific	1 40	1 85	1 25	....
Bates & Baxter Gold	....	2 00	....	2 00
Benton Gold	....	90	....	90
Bobtail Gold	....	3 00	....	3 00
Boscobel Silver	....	....	....	....
Bullion Consolidated	....	1 50	....	1 50
Burroughs Gold	....	....	....	....
Central Gold	....	....	....	....
Crozier Gold	....	....	....	....
Columbian G. & S.	3 15	3 20	3 20	3 25
Consolidated Colorado	....	10	....	....
Consolidated Gregory	7 95	8 00	6 65	6 75
Corydon	1 35	1 40	1 20	1 25
Des Moines Gold	....	....	....	....
Downieville Gold	....	8	5	8
Gilpin Gold	....	....	....	....
Gold Hill	....	4 00	....	4 00
Gunnell Gold	....	4 00	3 00	3 50
Gunnell Union	10	25	10	25
Grass Valley	....	....	....	....
Holman	10	16	12	17
Hope Gold	....	40	....	70
Keystone Silver	....	....	....	....
Kipp & Buell Gold	70	90	55	70
La Crosse Gold	40	....	70	75
Liebig	....	....	....	....
Liberty Gold	....	....	3	8
Manhattan	....	....	25	60
Montana Gold	....	....	....	50
New York	50	80	50	1 00
Nye Gold	6	8	6	8
Ohio & Colorado G. & S.	....	1 00	1 00	....
People's G. & S. of Cal.	40	60	30	50
Quartz Hill	1 80	1 95	1 76	1 78
Reynolds Gold	2	5	4	5
Rocky Mountain Gold	40	1 00	55	90
Smith & Parmelee Gold	4 00	4 05	4 70	4 75
Sensenderferfer	9 25	9 75	8 00	8 50
Symonds Fork	....	....	....	....
Texas Gold	....	25	16	25
Yellow Jacket Gold	....	....	....	....

Copper Stocks.—Rockland sold, s.3 and s.30, at $8.00, b.30 $8.25; Charter Oak, s.3, $2.20.

	May 3.		May 10.	
	OFFERED.	ASKED.	OFFERED.	ASKED.
Caledonia	....	....	....	15 00
Canada Copper	....	....	....	60
Charter Oak Copper	2 15	....	2 10	2 25
Davidson Copper	....	1 10	85	1 05
Franklin Copper	15 00	....	....	....
Hilton Copper	....	....	....	1 00
Isle Royal Copper	....	....	....	....
Rockland Copper	....	....	....	8 50
Ogma Copper	....	....	....	....

Petroleum Stocks.—Brevoort sold at 50, and Buchanan Farm at 15c. to-day.

	May 3.		May10	
	Offered.	Asked.	Offered.	Asked.
Bennehoff Run	2 50	....	3 00	3 55
Buchanan Farm	15	17	15	18
Central	....	1 00	50	90
Clinton Oil	....	....	50	1 50
Cherry Run Special	....	....	....	....
Excelsior	....	15	....	15
Manhattan	....	15	....	15
N. Y. and Alleghany	2 50	4 50	....	5 00
Pit Hole Creek	45	1 00	50	....
Rynd Farm	7	15	6	20
United Pet. Farms	....	10	5	....
United States	....	3 75	2 00	4 00

Lead Stocks.—Walkill sold at 44c after close.

Miscellaneous Stocks.—Wells, Fargo & Co. 67; Pacific Mail Steamship Co. 128⅛@128½; Cumberland Coal Pref. 31@32; Quicksilver 28½.

Government Stocks.—Firm and active. The following were the figures to-day:

U. S. 6s, 1867	135⅛@ —
U. S. 6s, 1868, coupon	132 @ —
U. S. 6s, coupons, 1881	111⅜@111⅝
U. S. 5-20s, 1862, coupon	108 @108½
U. S. 5-20s, 1864, coupon	105⅛@105⅜
U. S. 5-20s, 1865, coupon	106 @106½
U. S. 5-20s, 1865, coupon, new	107⅜@107⅝
U. S. 10-40 coupon	99¾@ 99⅞
U. S. 7-30, 1st	106¼@106⅜
" 2nd	105⅜@105⅝
" 3rd	105⅜@105⅝

Foreign Exchange is strong. Bills at 60 days on London are quoted at 108@109½ for commercial; 109⅛@109⅞ for bankers'; do. at short sight, 110¾@110½; Paris at 60 days, 5.18¾@5.12½; do. at short sight, 5.13¾@5.10; Antwerp, 5.18¾@5.15; Swiss, 5.18¾@5.16¼; Hamburg, 36@36½; Amsterdam, 40⅞@41⅛; Frankfort, 41⅛@41½; Bremen, 78¾@79¼; Prussian thalers, 72@72½.

Gold—137¼ at 2 P. M.

The specie movement in New York in 1867 compares as follows:

Received from California:		
In January	$2,482,310	
Do. February	1,749,900	
Do. March	1,913,984	
Do. April	3,162,784	$9,308,078
Imported from Foreign Ports:		
In January	$126,719	
Do. February	136,491	
Do. March	145,867	
Do. April	271,710	$680,787
Total supply since Jan. 1, 1867		$9,989,765
Exported to Foreign Ports:		
In January	$2,551,351	
Do. February	2,124,461	
Do. March	1,891,141	
Do. April	2,261,283	$8,828,236
Gain since Jan. 1, 1867		$1,161,529

Copper.—The market is very quiet. We quote it at 24c. A good stock is on hand.

Iron is quiet. American pig sells at $37@39 25 for No. 1, and No. 2, $38@38 25. The retail market is dull. Wm. Outhout reports prices as follows: Swedish Iron, $155@165; common, $95@100; refined, $105@110; band, $137½; rods, 3-16 to ⅝, $110@170; scroll, ⅜ to ⅞, $187½@137½; horseshoe, $132½@137½; hoop, ⅝ to 2, $142½@200; ovals and half ovals, 1½ to 1½, $132½@142½; nail rods, $90@10½.

Tin.—Very quiet, 30½c. in currency.

Lead.—Very dull, 9¼c. in currency.

Spelter.—Very dull, at 9¼c. currency.

Petroleum.—The market is dull and prices are weak at 11c. for crude in bulk, and 26½c. for do. in barrels; refined in bond, at 22½c. for light straw to white, 24½c. for prime light straw to white, 26@26½c. for standard white, and 27@27½c. for prime white.

THE SLATE TRADE.

We notice more activity and prices are somewhat firmer.

Roofing Slate.

Vermont purple,	1st	quality, per	square		$11 00@12 00
" "	2d	"	"		10 00@11 00
" green,	1st	"	"		11 50@12 50
" "	2d	"	"		10 50@11 50
" red,	1st	"	"		12 50@13 50
" "	2d	"	"		11 50@12 50
Pa. bl'k & d'k blue,	1st	"	"		10 50@11 50
" " "	2d	"	"		9 50@10 50

PRICES DELIVERED. PER SQUARE.

Chicago.—Vermont purple and green,	1st qual.				$14 00@15 00
" " "	"	"	2d	"	13 00@14 00
" " red	"	1st	"		15 00@16 00
" " "	"	2d	"		14 00@15 00
Penn. black	"	1st	"		15 50@16 50
" "	"	2d	"		14 50@15 50

Buffalo.—$2 or $3 lower than Chicago.
Cleveland.—$1 higher than Buffalo.
Cincinnati.—50 cents higher than Cleveland.
New Orleans.—$13@20 per square.
Charleston, S. C.—$15@16 per square.

THE COAL TRADE.

Domestic has been in fair demand, and we hear of an increase of orders: The Foreign supply is small, with a light demand, except for gas purposes. There is very little animation in the market, generally, dealers still questioning whether coal will not go still lower. The regular Pittston sale, for May, is advertised to take place on the 15th inst.; 30,000 tons are offered. From the light amount to be sold, it is generally believed that the prices obtained at their last sale will be fairly maintained. The retail trade, during the past week, has improved, and dealers have been busy—ere long, they will have to replete their stocks, which will throw more activity in the wholesale market.

Northern Central Railroad.—From the report of the President of this Company, says an exchange, we glean the following:

Gross receipts of line	$4,042,125 58
Expenses	2,746,837 25
Net earnings for the year	1,295,288 33

The tonnage in 1866 increased 315,965 tons. The whole coal tonnage of the line was 553,669 tons, of which 39,425 tons Anthracite and 11,068 tons Bituminous were used by the company. The increase over last year is 90,879 tons, all of which was consumed on the line, as the quantity that reached Baltimore was 6,500 tons less than in 1865.

The iron rails, which formerly lasted ten years, now wear out in three years.

The coal tonnage of the Pennsylvania Coal Company's Canal in 1866 was 603,975 tons, derived from the following sources:

	TONS.
Wyoming Valley & North Branch Canals	368,928
Shamokin Region	33,966
Trevorton	1,533
Lykens Valley	172,115
Broad Top & Allegheny	15,433
	603,975

Of this amount, 316,615 tons reached tide water; 264,676 tons were delivered on line of Pennsylvania Canal, 20,475 to Lebanon, and 2,209 tons to other points.

The Pennsylvania Railroad Company has sold its canals to the Pennsylvania Canal Company. This company proposes enlarging its canals, so as to double the capacity, and the connecting line propose also to enlarge their canals, with a view of carrying coal cheap to market.

The following is the quantity of Coal shipped over the principal roads for the week ending May 3, 1867.

	1866.		1867.		
	WEEK.	TOTAL.	WEEK.	TOTAL.	DEC'RS.
Phil. & Reading R.R.	.....	.....	67,479	1,013,638	.....
Schuylkill Canal	.....	.....	22,942	170,118	.....
Lehigh Val. R. R.	22,622	626,332	49,148	568,002	58,330
Lehigh Canal	.....	.....	31,985	81,169	.....
Del & Hudson	46,080	151,271	36,360	226,445	.....
Scranton North	8,309	120,238	9,030	121,933	.....
Scranton South	23,435	318,910	29,532	427,125	.....
Penn'a. Coal Co. Rail	.....	221,717	20,528	101,783	119,934
" " Canal	.....	.....	1,302	.....	.....
Wyoming North	.....	.....	.....	.....	.....
Wyoming South	.....	.....	.....	.....	.....
Shamokin	10,534	137,203	6,028	124,660	12,544
Trevorton	.....	.....	1,768	7,403	.....
Short Mountain	3,061	11,574	1,613	6,695	4,879
L. V. Co.	2,221	8,504	1,024	12,412	14,108
Broad Top	.....	75,426	5,557	74,309	1,117
Williamsto'n	.....	.....	2,122	15,776	1,577
Total	.....	.....	286,418	2,951,468	.....
Cor'ng time last year	.....	.....	.....	.....	.....
Decrease	.....	.....	.....	.....	.....

Schuylkill Coal Trade.

BY RAILROAD & CANAL, FOR WEEK ENDING MAY 3, 1867.

	Railroad.	Canal.
St. Clair	26,939	.....
Port Carbon	8,710	.....
Pottsville	.....	.....
Schuylkill Haven	18,087	.....
Auburn	2,797	.....
Port Clinton	10,946	.....
Total for week	67,479	22,942
Previously this year	946,159	147,176
Total	1,013,638	170,118

Lehigh Coal Trade.

SHIPPED FOR THE WEEK ENDING MAY 4, 1867.

SHIPPERS.	CANAL. Week. Tons.	CANAL. Total. Tons.	RAILROAD. Week. Tons.	RAILROAD. Total. Tons.
Lehigh Coal & Navigation Co.	11,555	14,574	....	....
Packer, Skeer & Co.	285	828	....	....
John Laubach & Co.	.....	.....	....	....
E. S. Silliman	.....	.....	2,280	38,259
Williams & Herring	95	95	332	4,602
W. T. Carter & Co. (Coleraine)	92	92	2,153	33,205
Spring Mountain Coal Co.	.....	96	4,260	34,907
Thomas Hull & Co. (N. Y. & Lehigh Co)	294	294	3,171	28,884
Honey Brook Coal Co.	825	1,578	3,550	38,328
German Pennsylvania Coal Co.	532	966	1,532	10,911
McNeal Coal and Iron Co	177	273	3,240	30,347
Knickerbocker Anthr. Coal Co.	178	576	451	20,452
North Mahany Mines (Mahanoy Col. now B. & C.	.....	.....	131	4,705
Delano do	.....	95	1,523	24,695
Primrose Mines (Rathbun, Stearns & Co.)	.....	.....	755	14,853
Walter, Brothers & Co. (now Bedford & Cox)	.....	.....	....	....
Mount Etna Coal Co.	.....	.....	....	58
Trenton Coal Co.	.....	90	10	754
Glendon Coal Co. (Glendon Colliery)	.....	.....	1,168	8,942
Thomas Coal Co.	90	90	352	7,553
East Boston	.....	.....	366	2,310
H. B. Hillman & Co.	.....	.....	333	4,798
Bowkley, Price & Co.	.....	.....	153	1,632
A. Pardee & Co. (Hazleton)	2,444	8,013	4,356	18,442
G. B. Markle & Co. (Jeddo)	2,322	6,322	....	....
Wm. S. Halsey & Co. (Mt. Pleasant)	189	189	340	755
Buck Mountain Coal Co.	1,889	6,610	1,270	9,806
Sharpe, Weiss & Co. (Council Ridge)	1,051	4,385	1,282	17,921
Coxe, Brothers & Co. (Cross Creek)	564	1,231	645	4,521
Ebervale Coal Co	1,590	4,335	1,281	8,560
Stout Coal Co.	647	2,879	1,154	3,157
Harleigh Coal Co	495	1,423	1,251	4,593
Ashburton Coal Co.	.....	.....	....	37
U. Lehigh Coal Co.	456	521	1,467	7,656
T. F. Hunt & Co	.....	.....	47	694
East Sugar Loaf	.....	.....	4,717	21,097
Baltimore Coal Co	339	2,538	624	21,050
Wilkes Barre Coal and Iron Co.	2,334	9,851	284	24,905
Franklin Coal Co	89	640	121	7,193
Audenried Impr'v't & Coal Co.	339	1,054	....	3,079
Germania Coal Co.	187	849	135	7,547
Lehigh & Susquehanna Coal Co.	286	858	203	9,102
New Jersey Coal Co.	250	686	194	7,472
Warrior Run Mining Co.	199	1,064	123	4,145
Union Coal Co	605	2,717	....	6,964
Wyoming Coal & Transp'n Co.	653	2,035	234	11,566
Parish & Thomas	187	522	713	17,583
Newport Coal Co	404	1,485	....	386
Everhart Coal Co	376	528	140	601
Beaver Meadow (D. W.)	.....	.....	48	106
John Connery	.....	.....	....	1,153
Other Shippers	98	907	5	144
Total	31,985	81,169	49,149	568,002

Lehigh and Mahanoy Coal Trade,

For week ending May 3, 1867.

NAMES OF SHIPPERS.	WEEK.	TOTAL.
Trenton Coal Co.	10 09	847 03
Mount Etna	.....	43 04
Mahanoy Coal Co.	151 02	4,716 05
Delano Colliery	1,323 04	24,836 17
Glendon Coal Co.	1,167 05	8,865 00
Rathburn, Stearns & Co.	759 00	14,655 13
E. S. Silliman	2,289 04	38,216 14
McNeal Coal & Iron Co.	5,418 01	30,305 04
Knickerbocker Coal Co.	636 05	20,884 09
Thomas Coal Co.	519 03	7,564 19
Williams & Herring	426 05	4,681 06
New Boston	366 13	2,310 04
Other shippers	.....	10 02
Total	11,045 11	157,936 11
Corresponding week last year	7,654 04	96,552 15
Increase	3,392 07	61,383 16
Decrease	.....	.....

Prices of Coal by the Cargo.

[CORRECTED WEEKLY.]

At New York, May 10, 1867.

Schuylkill Red Ash, choice	$6 25@	$6 50
" Ordinary	5 50	6 00
" White Ash Lump	5 50	5 75
" Steamboat	5 50	5 75
" Broken	5 50	5 75
" Egg	5 50	6 00
" Stove	5 50	6 00
" Chestnut	4 75	5 00
Lehigh White Ash Lump	5 75	....
" Broken	5 50	....
" Egg	5 50	....
" Stove	5 75	....
" Chestnut	5 00	....
Wilkesbarre Lump	6 25	....
" Broken & Egg	5 50	....
" Stove	5 75	....
" Chestnut	5 25	....
Wyoming Lump	5 00	....
" Steamboat	5 25	....
" Stove	5 50	....
" Chestnut	4 75	....

SPECIAL COALS.

Diamond Vein Red Ash, Schuylkill	6 25	....
Locust Dale White Ash, "	5 75	....
Honey Brook " " Lehigh	5 75	....
Sugar Loaf " " "	5 75	....
Room Run " " "	5 75	....
Old Company's " " "	5 75	....
Harleigh " " "	5 75	....
Spring Mountain " " "	5 75	....
Sugar Creek " " "	5 75	....
Silver Brook " " "	5 75	....
Fulton White Ash	5 75	....
Stout	5 75	....
Buck Ridge " " Shamokin	6 00	....
Spohn & Lewis	6 50	....
Shenandoah	5 50	....
Swatara Falls, Red Ash	5 75	....
Henry Heils, E. Franklin, Lorberry	6 00	....
New England Red Ash	5 75	....
Broad Mountain	5 50	....
Wyoming	5 50	....
McNeal Co.	5 75	....
George's Creek (Balt.)	5 25	....
" " (Georgetown)	5 00	....
Locust Mountain (Reppler)	5 05	....
Duncan Red Ash	6 50	....
Blossburg & Fall Creek	6 25	....
New Burgh Orrell Gas Coal	9 50	....
Despard Gas Coal	9 50	....
Westmoreland Gas Coal	9 50	....
Wilkesbarre Coal & Iron Co.	5 50	....

Agents for these Coals may be found in our advertising columns.

At Philadelphia, May 10, 1867.

Lehigh Lump and Steamboat	$5 00@	5 50
" Broken and Egg	5 25	5 50
" Stove	5 25	5 50
" Chestnut	4 50	....
Schuylkill Red Ash Prepared	5 00	5 25
" Chestnut	3 50	....
" White Ash Lump and Steamboat	4 50	....
" Broken	4 25	....
" Egg and Stove	4 25	4 50
" Chestnut	3 50	3 75
Locust Mt. Lump, and Steamboat	4 50	....
" Broken	4 50	....
" Prepared	4 50	....
" Chestnut	3 75	....
Lorberry Coal	4 75	....
Shamokin	5 00	....
Franklin, (Lykens Valley)	5 00	....
Broad Top	5 00	5 25

Scranton Coal at Elizabethport, May 10, 1867.

Lump	$4 50@	— —
Steamer	5 50	— —
Grate	5 50	— —
Egg	5 25	— —
Stove	5 50	— —
Chestnut	4 50	— —

Prices for Pittston Coal at Newburgh, May 10, 1867.

Lump, per ton of 2240 lbs	$5 30	....
Steamer, " " "	5 30	....
Grate " " "	5 35	....
Egg " " "	5 45	....
Stove " "	5 70	....
Chestnut "	4 50	....

70 cents additional to New York.

Lackawanna at Rondout, May 10, 1867.

(Average contract prices for year.)

Lump	5 00 @	....
Steamer	5 10 @	....
Grate	5 30 @	....
Egg	5 40 @	....
Stove	5 55 @	....
Chestnut	4 60 @	....
Pea	4 00 @	....

Lehigh Coal at Elizabethport, May 10, 1867.

Lump	5 75@	....
Steamboat and Broken	5 50	— —
Egg	5 50	— —
Chestnut	5 00	— —
Stove	5 75	— —

At Baltimore, May 10, 1867.

Wilkesbarre & Pittston W. A., wholesale	$6 50@	$6 75
" " " retail	7 50	8 00
Lykens Valley & Sunbury R. A., wholesale	6 50	6 75
" " " retail	7 50	8 50

George's Creek and Cumberland Coal.

Run of mine, f. o. b. at Locust Point at Georgetown $5 00@ 5 25

Wilkesbarre Coal at Elizabethport.

Lump	5 00	.. ..
Steamer	5 25	.. ..
Broken	5 55	.. ..
Egg	5 25	.. ..
Stove	5 50	.. ..
Chestnut	4 75	.. ..

(From the Mercantile Gazette.)

At San Francisco April 16, 1867.

Duty Bituminous $1.25. Other kinds 40 cents per ton

Australian	$12 00@	....
Do Wallsend	12 00	13 50
Pittston, ton	13 50	.. ..
Lehigh	17 00	.. ..
Cumberland, cks	....	23 00
do bulk	22 00	.. ..
Scranton	14 50	.. ..
Liverpool	13 00	.. ..
Scotch	14 00	.. ..
West Hartly	14 00	.. ..
Vancouver Island	13 00	.. ..
Bellingham Bay	10 00	.. ..
California	6 00	8 00

Prices of Provincial Coals.

[REPORTED FOR THE JOURNAL OF MINING.]

BY LOUIS J. BELLOT, JR., 43 Pine street, N. Y.

Duty $1.25 per ton.

Block House (on board)	$2 00	gold
Gowrie "	1 75	"
Lingan "	1 75	"
Sidney "	2 25	"
Picton "	2 25	"
Glace Bay "	1 87½	"
International Co.'s "	1 75	"
Slack Coal "	75@1 00	"

Prices of Foreign Coals.

[REPORTED FOR THE JOURNAL OF MINING.]

BY H. L. PARMELE & BRO., 32 Pine street, N. Y.

Duty $1.25 per ton.

Liverpool Gas Caking	$10 50
" " Cannel	13 00
" House "	16 00
" " Orrel	16 00

Per ton 2240 lbs.

PRICES FROM YARD:

Liverpool Orrell, screened	18 00
" Cannel, "	20 00

per ton 2000 lbs. delivered.

Coal Freights.

(Corrected Weekly.)

From Port Richmond, Philadelphia.

Albany (& towing)	—	@	—	Mobile	4 00	@	—
Alexandria	—	—	—	Middletown	1 40	—	—
Amesbury Point	*2 90	—	—	Nantucket	2 65	—	—
Appanoag	—	—	—	Medford	—	—	—
Aspinwall	—	—	—	Marblehead	—	—	—
Bangor	2 50	—	—	Machiasport	—	—	—
Bath	—	—	—	Nepousett	2 75	—	—
Baker's Landing	—	—	—	New Bedford	2 25	—	—
Bedford	—	—	—	Newburg	1 00	—	—
Belfast	—	—	2 50	Newburyport	2 65	—	—
Boston	2 50	—	—	New London	2 25	—	—
" bridges	03	—	—	New London	2 25	—	—
Bridgeport	2 00	—	—	Newport	2 00	—	—
Bristol	—	—	—	Newport, R. I.	2 10	—	—
Beverly	2 50	—	—	New York	1 30	1	35
Calais	—	—	—	Norfolk & tow	1 50	—	—
Cambridge	—	—	—	Norwalk	1 60	—	—
Catskill (& tow)	—	—	—	Norwich & tow	2 25	—	—
Charleston, S. C.	—	—	—	Pawtucket and tow	2 40	—	—
Charlestown	2 50	—	—	Petersburg	2 00	—	—
Chelsea	2 50	—	—	Philadelphia	—	—	—
Commercial Point	2 75	—	—	Portland	2 03	2	65
Cohasset Narrows	2 75	—	—	Portsmouth	—	—	2 65
Davesport and dis.	2 50	—	—	Providence	2 00	—	—
Delaware City	— 80	—	—	Provincetown	2 05	2	60
Dighton	2 50	—	—	Poughkeepsie, & Ug	1 60	—	—
Dover	2 90	—	—	Port Chester	1 60	—	—
Deer Plain	2 75	—	—	Plymouth	—	—	—
East Cambridge	2 75	—	—	Richmond, Va	2 00	—	—
East Greenwich	2 25	—	—	Roxbury	2 75	2	85
Elizabethport	—	—	—	Rockland	2 92	—	—
Fall River	2 00	—	—	saugus	2 50	—	—
Fort Monroe	1 60	—	—	Sing Sing	1 60	—	—
Fredericksburg	1 75	—	—	St. Johns (in gold)	2 00	—	—
Fair Haven	2 15	—	—	Salem	2 50	—	—
Gardiner	3 00	—	—	Savannah, Ga	2 25	—	—
Georgetown	1 60	—	—	Stonington	2 25	—	—
Gloucester	2 75	—	—	Saco	1 80	—	—
Greenpoint Towing	1 45	—	—	Salisbury	2 90	—	—
Greenport	2 00	—	—	Thomaston	—	—	—
Hartford	2 00	—	—	Taunton	—	—	—
Hudson	1 40	—	—	Washington, D. C.	1 60	—	—
Haverhill	3 45	—	—	West Point & tow	1 70	—	—
Key West	2 50	—	—	Wilmington	1 00	—	—
Lynn and dis	2 50	—	—	Williamsburg	—	—	—
Milton	—	—	—	Winterport	2 00	—	—
Malden	—	—	—	Yarmouth	2 80	—	—
Eastport	2 25	—	—	Troy	1 50	—	—
Hingham	2 75	—	—	Weymouth	2 50	—	—

From Newburgh.

River.	Co.'s Boats.		Eastern.		
Albany	50@	.. ..	Boston	1 75@	.. ..
Barrytown	35	.. ..	Bridgeport	1 12½	.. ..
Catskill	35	.. ..	Bristol	1 45	.. ..
Cold Spring	30	.. ..	Dighton	1 45	.. ..
Coeymans	45	.. ..	Fall River	1 45	.. ..
Coxsackie	40	.. ..	Mystic	1 50	.. ..
Fishkill Landing	20	.. ..	New Haven	1 12½	.. ..
Greenbush	50	.. ..	New London	1 30	.. ..
Haverstraw	45	.. ..	Newport	1 45	.. ..
Hudson	35	.. ..	Norwalk	1 12½	.. ..
New York	70	.. ..	Norwich	1 40	.. ..
Nyack	50	.. ..	Pawtucket	1 65	.. ..
Peekskill	40	.. ..	Providence	1 50	.. ..
Poughkeepsie	25	.. ..	Stamford	1 12½	.. ..
Rhinebeck	30	.. ..	Stonington	1 50	.. ..
Saugerties	35	.. ..	Warren	1 45	.. ..
Sing Sing	50	.. ..			
Stuyvesant	40	.. ..			
Tarrytown	50	.. ..			
Troy	55	.. ..			
West Point	30	.. ..			
West Troy	55	.. ..			
Yonkers	55	.. ..			

From Rondout.

River.		Eastern.		
Albany	50@	Boston	2 05@	.. ..
Barrytown	35	Bridgeport	1 25	.. ..
Catskill	40	Bristol	1 55	.. ..
Cold Spring	30	Dighton	1 50	.. ..
Coeymans	50	Fall River	1 55	.. ..
Coxsackie	45	Mystic	1 40	.. ..
Fishkill Landing	20	New Haven	1 25	.. ..
Greenbush	55	New London	1 40	.. ..
Haverstraw	45	Newport	1 55	.. ..
Hudson	45	Norwalk	1 25	.. ..
New York	1 75	Norwich	1 50	.. ..
Nyack	55	Pawtucket	1 85	.. ..
Peekskill	45	Providence	1 60	.. ..
Poughkeepsie	30	Stamford	1 25	.. ..
Rhinebeck	35	Stonington	1 40	.. ..
Saugerties	45	Warren	1 55	.. ..
Sing Sing	55	Hartford	1 70	.. ..
Stuyvesant	50	Portsmouth	2 30	.. ..
Tarrytown	55	Newburyport	2 30	.. ..
Troy	65			
West Point	35			
West Troy	60			
Yonkers	55			

From Elizabethport.

Albany	$1 00@	— —	New London	1 25@	— —
Boston	1 80	1 90	Newport	1 50	— —
Bridgeport	1 00	— —	New York	55	60
Fall River	1 50	— —	Norwalk	1 00	— —
Hartford	1 50	— —	Norwich	1 30	— —
Hudson	1 00	— —	Pawtucket	1 75	— —
Lynn	—	— —	Portland	2 00	— —
Middletown	1 25	— —	Portsmouth	2 15	— —
New Bedford	1 40	— —	Providence	1 50	— —
Newburyport	2 10	— —	Salem	2 00	— —
New Haven	1 00	— —	Taunton	1 40	— —

From Georgetown or Alexandria.

To Philadelphia	$1 50	— —	Boston	3 00	3 25
New York	2 25	2 50	Sound Ports	2 75	3 00

From Baltimore.

To Philadelphia	$1 40@	1 50	Boston	3 00@	3 25
New York	2 25	2 50	Sound Ports	2 75@	3 50

Provincial Freights.

	Currency.
Sydney to N. Y.	$3 50
Lingan	4 00
Cow Bay	4 00
Big Glace Bay	4 25
Little "	3 50

Foreign Freights.

New Castle and Ports on Tyne	£18@ keel.
Liverpool	11s.@ 12s.

Rates of Transportation to Tide Water.

[BY RAILROAD.]

To Port Richmond.

Transportation from Schuylkill Haven to Pt. Richmond	$2 00
Freight from Pt. Richmond to New York	1 50
Total	$3 50
Drawback	50
	3 00

From Port Carbon 8 cents per ton more.

To Elizabethport

L. V. R. R. from Mauch Chunk to Easton	$ 81
C. R. R. of N. J., Easton to Elizabethport	1 22
	2 03
Shipping expenses at Elizabethport	28
Total	$2 31

To Port Johnson.

L. V. R. R.	$ 81
C. R. R. of N. J.	1 20
Shipping Expenses	25
Total	$2 35

To Hoboken.

L. V. R. R.	$ 81
Morris and Essex R. R.	1 29
Shipping Expenses	25
Extra to N. Y. or Hudson River Shipments	10
Total	$2 45

[BY CANAL.]

To Port Richmond.

From Schuylkill Haven to Port Richmond	$1 00
Freights and tolls by Raritan Canal	2 20
	$3 20
Drawback	20
Total	$3 00

To New York.

From Mauch Chunk to New Brunswick—	
By Lehigh: Del. Div. and Del. and Raritan Canal	90
Freights through	1 25
Towage	22
	$2 37

To New York via Morris Canal

Lehigh Canal	34
Morris "	50
Towage	10
Freight	1 45
Total	$2 39

Expenses from Mauch Chunk to Jersey City for Re-shipment.

Lehigh tolls (net)	34
Morris "	41
Freight	1 40
Re-shipping	30
Total	$2 45

BOSTON STOCK MARKET.

(By Telegraph.)

BOSTON, May 10, 1867.

Prices bid to-day were as follows:

Canada	30c	Minnesota	5
Copper Falls	22½	Quincy	21
Franklin	14½	Cary Improvement	3½
Hancock	37⅛	Rockland	..
Huron	4	Water Power	30
Isle Royal	7	Central	..

Sales at Boston Stock Exchange, April 25.

700 shs	Water H'r	29¾	
200 do	Allouez	4½	
100 do	do	b.60..	4¾
100 do	do		4⅝
100 do	do	b.60..	4⅞
8 do	do		4¼
200 do	do	b.60..	5
100 do	do		4¾
300 do	Canada		34
250 do	Copper Falls		23
75 do	Franklin		15
100 do	do	b.60..	15
50 do	do		14
195 do	do		14
200 shs	Huron		4¾
100 do	do		5
100 do	do	b.60..	5
250 do	do		4½
200 do	Isle Royal	b.60..	7¾
200 do	do		7½
100 do	Pethorick		1½

SECOND CALL.

300 do	Water P'r		30
200 do	do	b.14..	30
20 do	do		29¾
30 do	Hancock		4½
500 do	Ophir G		2 1-16

SAN FRANCISCO STOCK MARKET.

Latest by Telegraph.—May 3.

Name.	Bid per foot.	Name.	Bid per foot.
Gould & Curry	525	Crown Point	1625
Savage	3100	Yellow Jacket	1525
Chollar-Potosi	500	Belcher	350
Ophir	425	Alpha	450
Hale and Norcross	3000	Imperial per share	275
Cal. Steam Navigation Co.	71	Cal. State Telegraph Co	30
Greenbacks	74½		

FOREIGN MARKET REVIEW.

Metal Report.

LONDON, E. C., April 18, 1867.

Although matters, political and financial, had improved, the metal market shows no signs of animation, in fact, the value of some articles has further declined.

IRON.—We cannot report any alteration in the position of either Welsh or Staffordshire iron; the demand is very moderate. Scotch pig-iron remains steady at 52s.

COPPER.—The prices of English and foreign copper have again receded a little; business is extremely difficult. Best select, £79 to £80; tough, £76 to £77; Burra, sellers at £82, and Wallaroo at £81 to a small extent; buyers 20s. per ton less. Chili bars, £71 10s. in Liverpool.

TIN.—The English smelters reduced the price of refined and common tin £3 per ton on Monday last, which has cost additional depression in foreign. We quote straits at £85 to £86; Banca £90 quite nominal. The Dutch market is flat at 52⅜ fl.

TIN-PLATES are dull of sale.

LEAD has further advanced 5s. per ton; good soft English pig £20.

SPELTER has further declined, sales having been made at £20 10s. spot and for forward delivery. The price for special brands is out, £20 15s. to £21.

VON DADELSZEN & NORTH.

Patent Claims.

Interesting to Miners, Millmen, Metallurgists Oil-Men and Others.

The following claims have recently been issued from the United States Patent Office:

64,221.—QUARTZ MILLS.—James Hitchens, Nevada City, Cal.

I claim an ore pulverizer, consisting of the containing cylinder A, and the supporting plate B, constructed and operating substantially as and for the purpose herein described.

64,233.—PREPARING FUEL FROM COAL DUST AND FRESH WATER PEAT.—Heman S. Lucas, Chester, Mass.

I claim the application of common salt either dry or in natural or artificial solutions in the preparation of fuel from fresh water peat and fine coal, in the manner and for the purpose set forth.

64,258.—AMALGAMATOR.—A. J. Senatz and G. W. Knowlton, Sacramento, Cal.

We claim the copper-bottomed pans, with the iron rods or bars and slots in the end, fastened to the sides of the pans with pins, and by means of which rods or bars the pans are flattened together, and an undulating motion is secured for the water and earth, which are dashed upward against the stationary rifles, whereby the earth or sand is prevented from becoming solid.

We also claim, as a part of the same machine, the turned up ends of these pans, and the machinery riffle beds connected with the pans, all of said parts being the machine in combination which produce the intended effect.

64,260.—APPARATUS FOR BURNING PETROLEUM, ETC., IN CONJUNCTION WITH STEAM OR HEATED AIR OR BOTH.—Gideon O. Spencer, Titusville, Pa.

First, I claim providing within the fire box or furnace, for the purposes herein set forth, a solid substance or its equivalent, capable of receiving and retaining the required degree of heat for resolving petroleum or other fluid hydrocarbons into gases, when brought in contact with the same.

Second, The within-described method of supplying the fuel and oxygen, by discharging petroleum or other fluid hydrocarbons through one or more pipes, having their orifices within blow-pipes or their equivalent, when applied and operated in combination with a heater, substantially as described, and for the purposes herein set forth.

Third, The use of one or more blow pipes, or their equivalent, for the purpose of supplying oxygen and concentrating the heat when applied and operated in combination with the heater, for the purposes herein set forth.

Fourth, The within-described method of revolving and consuming crude petroleum and other fluid hydrocarbons, by impinging one or more currents or jets of the same upon or against a solid heated substance, or its equivalent, within the fire-box or furnace, capable of receiving and retaining such a degree of heat as shall resolve said crude petroleum or other fluid hydrocarbons, into gases, for the purposes herein set forth.

Fifth, An apparatus for burning crude petroleum and other fluid hydrocarbons, consisting substantially of a heater, one or more pipes for supplying the fluid hydrocarbon, and one or more blow pipes, combined and applied for the purposes herein set forth.

64,333.—QUARTZ CRUSHER.—A. Komp, New York City.

I claim the oscillating, crushing, and grinding jaw, E E, in combination with the revolving jaw, C C', constructed substantially as and for the purpose described.

64,339.—MILL FOR CRUSHING ORE.—Simon F. Mackie, New York City.

First, I claim the combination of the cylinder, stamp heads, a, covers, c, pistons, f, piston rods, g, cross heads, y, connecting rods, r, crank shaft, x, and guides u, with the bed k, and screen, l, substantially as herein described, and for the purposes herein set forth.

Second, The plate, z, in combination with the flanged stamp head as described.

64,343.—MANUFACTURE OF FUEL FROM ANTHRACITE COAL DUST.—Edward G. Markley, Borough, Sunbury, Pa., and George H. Bardwell, Philadelphia, Pa.

64,353.—MANUFACTURING METALS, GLASS AND POTTERY.—E. W. Nohe, Ripon, Wis.

I claim the manufacture of metals from the ore without the usual mixture with the latter of coal or other solid face by the means of the combustion of gas generated for the purpose and brought directly into the furnace and burned in combination with a blast of air substantially in the manner and for the purposes set forth.

Mineral and other On-dits.

☞ The Montreal *Gazette* notices the first bloom made in Canada with pure peat fuel, and pronounces it of the very highest quality, equal to the best Swedish iron. The bar was bent cold by a vice, and doubled up close at right angles with an edge, without a crack or flaw appearing, the outer corners remaining smooth and sharp; a test which it is said no coal-iron made in Canada will stand. The fact is of great importance to all those countries where coal is scarce, but peat and iron abundant. The peat resources of California are almost unlimited, and the question of their utilisation and ultimate value is merely a question of time.

☞ The Vegra and Clogau mine, near Dolgelly, Wales, in the early stage of its working, returned gold to the value of £46,000, and paid dividends to the amount of £26,000. After this, for a period, its success was not so great, but, under new management, the yield has, for the last eight months, steadily increased. In the first fifteen days of April, it had reached 345 ounces. The ore is rich, 440 lbs. of ore having given 341 ozs. of metal. A portion of it gave upwards of 2,300 ozs. per ton.

☞ Melbourne *Argus* says: "A small but very beautiful diamond has been found in a claim at Young's Creek, near Beechworth. The stone is perfectly white, and the crystallization well defined. It is the second diamond found on that creek.

☞ Some time since the capital of England, invested in agriculture, amounted to £3,311,000,000, returning a profit of 13 per cent.; that invested in manufactures was £218,000,000, returning a profit of 120 per cent.

☞ The mining of the Lake Superior District is on the increase, from 1,445 tons raised in 1855, to 115,721 in 1862, to 185,257 tons in 1863, and in 1864 to 255,123 tons.

☞ Coal produced here in 1850 was valued at $6,100,000; in 1860, having increased at the rate of 169.9 per cent., it was valued at $19,000,000.

☞ In Europe, people are satisfied with from 3 to 5 per cent. on their investments in mines; here they might get from 25 to 75 per cent.

☞ Petroleum was discovered in this country in 1847; the product in 1859 was 325, in 1861, 184,927 bbls., and in 1864, 500,000 bbls.

☞ In Canada there are 73 gold mines, employing 708 miners. The yield of gold for the last three months is valued at $680,955.

☞ In 1846 the exports of the United States were valued at $100,000,000. In 1847 they increased to $150,000,000.

☞ In 1860 there were 2,514,222 tons of iron, valued at $20,000, mined in this country.

Special Scientific Brevities.

☞ The *Elcho Roannais* mentions a curious fact occurring at the thermal establishment of St. Alban (Isere). Some workmen were engaged in lowering the water in the Cesar basin so as to be able to repair the sides, when suddenly a sort of detonation was heard under ground, and the sprug began to boil, emitting gas bubbles with great regularity. Since that day effervescing drinks have been made in vast quantities from the abundant supply of gas. The mineral water has also become much stronger.

☞ Coal, M. Barthelot regards as a very complex body, and he thinks there exists in it some immediate principle, which, decomposed singly, gives benzine; while another and similar principle gives marsh gas (formene); and these two re-actions taking place simultaneously, occasion the formation of the hydrocarbons by the reciprocal union of the two bodies named.

☞ It is stated that a good mixture for welding iron may be thus formed. With Borax mix 1-16th of sal-ammoniac, and having fused the mass, pour it on an iron plate; when cold, pulverize it, and mix it with an equal weight of quicklime; sprinkle it on the iron, which is heated to redness, and replace it in the fire; it may be welded below the usual heat.

☞ Nitrate of potash, 10 part; picric acid, 10; bichromate of potash, 8-5—intimately mixed—give, according to Dr. Borlinetto, professor of chemistry in the University of Padua, an excellent gunpowder of the best sporting quality.

All Sorts.

☞ A writer in Moore's *Rural New Yorker* gives the following directions for keeping fresh meat: Cut the meat in slices ready to fry; pack it in a jar, in layers, sprinkle with salt and pepper just enough to make it palatable; place on the top a thick paper or cloth, with salt half an inch thick; keep this on all the while. Meat can be kept for three weeks in the summer, and the last will be as good as the first.

☞ Within forty years, 51,000 miles of steam railways have been built in the United States, costing $1,502,594,000. New England has 3,851 miles in use, costing $199,071,483; New York State, 3,025 miles, costing $152,579,769; Pennsylvania, which built the first railroad in the country in 1809, 4,037 miles, costing $210,680,000. She has also 700 miles of underground track in connection with coal mines.

☞ One of the lady teachers in the industrial school at Petersburg, Va., was recently questioning her pupils from Scripture, and asked, "Who died for you?" To which a little fellow shouted in reply, "Abraham Lincoln."

☞ The Madison *Argus* told a newly married friend that he would find a difference between the matrimonial and editorial experience. In one case the devil cries for copy, and in the other case the copy cries like the devil.

☞ A French savan publishes a proposition to utilize the dead human bodies which are now wasted, by changing them into illuminating gas, as is actually the case.

☞ Dr. Livingstone says that the African tribes on the Zambesi consider the English iron "rotten." A Birmingham blacksmith chilled a specimen of iron made by these people, and found that it was then steel. De Chaillu says that the Fans will not use American or English iron in making their knives and arrow heads, but prefer their own, which has greater tenacity.

☞ Recent arrivals from Hawaii state that a new eruption has occurred on the summit of Manaloa. It is thought to be the old crater of Mokurreorreo, which was in action a few months ago.

☞ The acquisition of Russian America gives the United States four hours and thirty-nine minutes more sunlight than it had before, though the sun still sets on *our* dominions.

☞ A gentleman just returned to this country from a tour in Italy, was asked how he liked the ruins of Pompeii. "Not very well," was the reply; "they are out of repair."

☞ An old German in Indianapolis boils up dead dogs for their oil. The substance obtained is considered excellent for croup in children.

☞ A north countryman, on being told that a certain kind of stove would "save half the coal," said, "Then I'll take two of them, and save it all."

☞ A professor of chemistry, while lecturing to a college class, said; "Gentlemen, oxygen is an invisible gas—you see it in these bell-glasses."

☞ A great discovery of antique jewelry has been made in an Indian mound in Tennessee.

Special Notices.

Some specimens of lead encased block-tin pipes have been sent to us for examination by the manufacturers, Colwell, Shaw & Willard, Twenty-seventh street, New York. We believe that the time for discussion of the injurious effects of lead on drinking water is past. No one can entertain a doubt on the subject; hence the importance of these inventions, which enable us to use lead piping without having to drink poison. In the pipe before us the enca-ed tin tube is made of any thickness desired. The tin and lead are united by a solder formed in the process of manufacture. The pipe is pliable, sufficiently strong to resist strain and pressure. Those who have tested it speak highly of its value.

COMPLIMENTARY NOTICES.

The London *Mechanics' Magazine*, April 5 1867, noticing the enlargement of the AMERICAN JOURNAL OF MINING, remarks:—From our knowledge of this paper we can say that it deserves all the success it meets with.

(*From the Georgetown, D. C., Courier, May* 4.)

The AMERICAN JOURNAL OF MINING, published in New York by Western & Co., at $4 a year, is a very useful and instructive sheet of twenty pages, well printed on fine paper, devoted to mining interests generally, and containing weekly a quantity of matter pertaining to the subjects to which with rare ability it is heartily devoted.

(*From the Sioux City, Iowa, Journal, April* 20, 1867.)

AMERICAN JOURNAL OF MINING.—Of late we have been receiving this journal, and although not a miner or scientific man, we have been very much interested in its perusal. It is full of valuable suggestions and information to miners—the result both of scientific investigation and practical experiment. It contains information and descriptions of the principal mining regions, together with the most approved machinery and apparatus for working the mines. Any man can afford to pay the subscription price for the paper, and to a miner it is invaluable. It is published weekly by Western & Company, at 37 Park Row, New York, at $4 per annum. Miners generally will take notice, and govern themselves accordingly.

(*From the Republican, Iowa City, Iowa, May* 1, 1867.)

The JOURNAL OF MINING is a work of much interest to those who are giving attention to that subject.

(*From the Nevada Daily Transcript, April* 4, 1867.)

AMERICAN JOURNAL OF MINING.—This valuable paper, published in New York by Western & Co., has become deservedly popular among all classes interested in the development of the mines. In its columns the mines of the Pacific slope receive a large share of attention. The JOURNAL has just entered its third volume and has been enlarged to twenty pages. The subscription price is $4 a year.

(*From the Hazleton, Pa., Sentinel, May* 2, 1867.)

The AMERICAN JOURNAL OF MINING, published by Western & Co., 37 Park Row, New York, has recently been enlarged to twenty pages. The JOURNAL OF MINING is peculiarly successful in supplying a want long felt by persons interested in mineral lands and mining operations. It is conducted with marked ability.

(*From the Easton, Pa., Express, May* 3.)

The AMERICAN JOURNAL OF MINING, published by Western & Co., 37 Park Row, New York, has recently been enlarged to twenty pages. It is conducted with marked ability

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THE DE LERY GOLD MINING COMPANY.

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THIS COMPANY has purchased all the Mineral Rights on the Seigniory of Rigaud-Vaudreuil, in the Province of Quebec; and, about the first of June, will commence practical operations by making mineralogical surveys, by shafting and tunnelling the quartz ledges, and by testing the quality of the rock, in their Stamp Mill, just completed. The area of the Seigniory is 108 square miles, and the quartz-veins are of unusual width and extent, furnishing a basis for the profitable employment of large amounts of capital in separate organizations; and as fast as the Company's surveys and tests shall show the best locations for new mills, they will furnish Maps, and propose liberal terms to parties desiring to develop mines on their own account. Contracts are now being made for the working of Placer Mines, which have already been abundantly proven to be of great richness.

Full information can be obtained at either office of the Company, or of the local Agent, Mr. Truman Coman, on the property.

J. M. WINCHELL,
General Manager.

Quebec, April 26, 1867. 7:4t

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New York, May 1st, 1867.
The PENNSYLVANIA COAL COMPANY will sell at Public Auction, on Wednesday, the 15th of May, inst., at 10½ o'clock A. M., at Exchange Salesrooms, No. 111 Broadway, by BURDETT, JONES & Co., Auctioneers, 30,000 Tons of fresh-mined "Pittston" Coal of the usual sizes, deliverable at Newburgh, within six weeks of the day of sale.
The sale will be positive, and upon the usual conditions for the sale and shipment of the Company's Coal; to be stated at the time of sale.
TERMS:—Fifty cents per ton, in current funds, payable on the day of sale, and the balance within ten days thereafter, if required, at the Company's Office.
3:6:2t GEORGE A. HOYT, Treasurer.

PUBLICATIONS.

LATEST FROM COLORADO! AND THE ROCKY MOUNTAINS.
THE COLORADO TIMES,
(H. GARBANATI AND O. J. GOLDRICK, EDITORS.)
Published Daily and Weekly at the most central Metropolis of the Colorado Gold Mines, and the cities and settlements along the Rocky Mountains, from the Upper Missouri to the Rio Grande, will prove a welcome visitor to Merchants, Brokers, Mining Capitalists, and the masses generally, throughout the "States," who may desire the Fullest and Most Reliable News from each and every Mining, Agricultural and Commercial section of
Colorado, New Mexico, Utah and Montana.
Its editors have been identified with the press of Colorado and the adjoining Territories of the Rocky Mountain country for the last seven consecutive years. Their actual experience in and acquaintance of the mining sections and commercial wants throughout Colorado, Utah, Montana and New Mexico, affords them advantages to furnish Easterners more interesting and valuable intelligence from week to week, than all the papers of the Plains combined. All interesting or important items about mines and mining, trade and commerce, agriculture and social life, throughout the Far West, will be chronicled in the COLORADO TIMES. Its original contributors at the prominent points, and its corps of correspondents at the large cities and settlements, will furnish funds of varied News, Local, Mining, Mercantile and Miscellaneous, calculated to Inform, Amuse, and Satisfy the business man or the family circle in the States who desire to keep themselves "posted" on the "Land of Promise"—Colorado.
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American Journal of Mining,
FOR 1867.
IMPROVED AND ENLARGED.
Of the numerous sources of wealth which this country possesses, none are more important, either in richness or extent, than her minerals. These have added largely to her prosperity, and afford a profitable means of investment for capital, and an extensive field for labor. THE AMERICAN JOURNAL OF MINING is acknowledged by the public and the press to be a faithful and accurate exponent of the important interests dependant on Mining, and to more fully meet the demands of circulating valuable and reliable information, it has recently been increased in size to twenty pages, thus making it the largest paper devoted to mining on this continent.
It contains: Illustrated descriptions of the latest improvements in Mechanical appliances used in opening, working and draining mines; crushing and treating the ore.
Original Papers on Geology, Metallurgy, Assaying, Chemistry, and various Scientific subjects, contributed by able Scientists, in a popular style and with scientific method and exhaustiveness.
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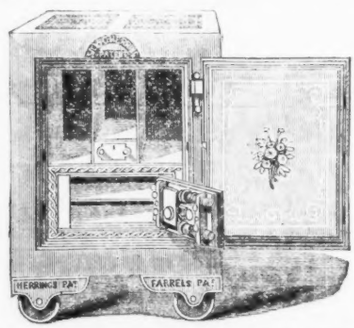

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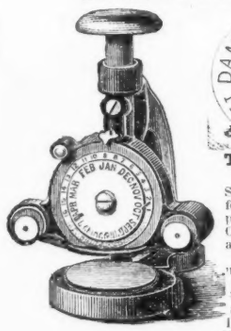

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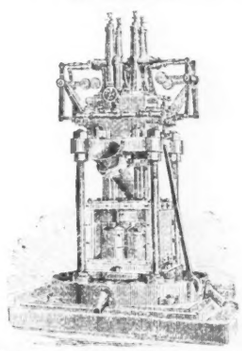

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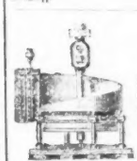

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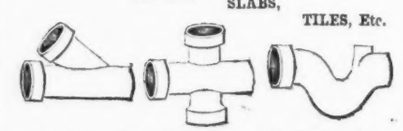

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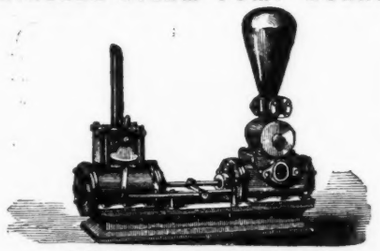

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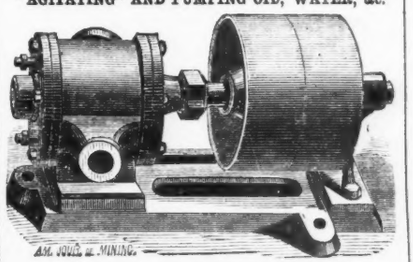

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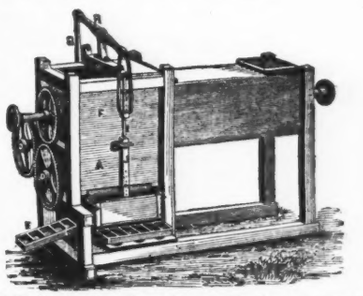

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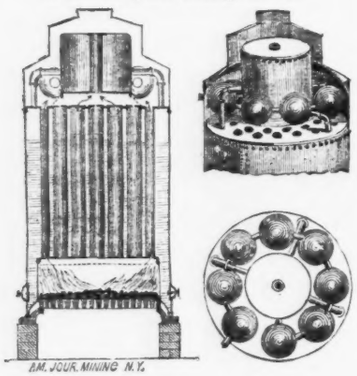

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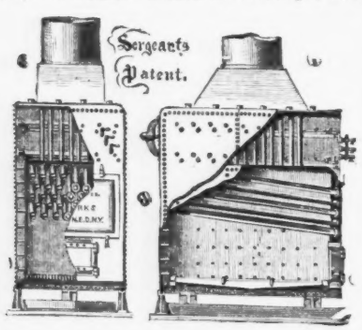

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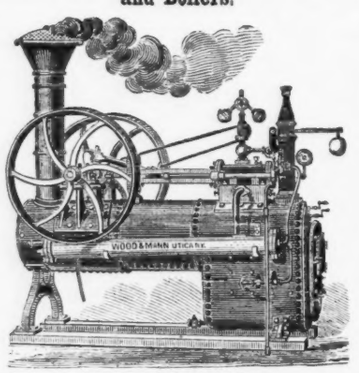

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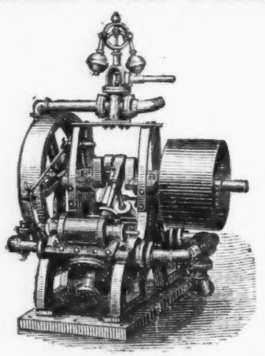

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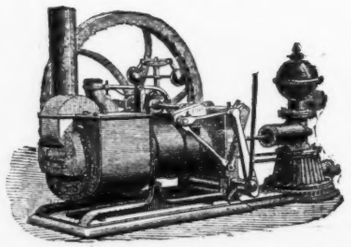

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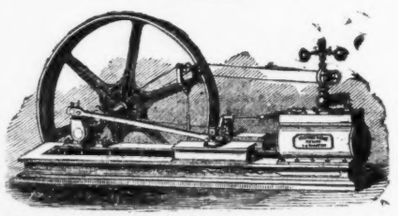

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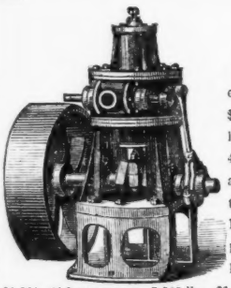

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